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AN EXAMINATION OF THE ARMED FORCES CLASSIFICATION TEST AND ITS USE AS A FORCE SHAPING TOOL

by

Brian D. Doherty

June 2007

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In an attempt to balance the manning of the United States Navy, the "Perform to Serve" program was instituted. As a part of this program, sailors are encouraged, and often required, to retake the Armed Services Vocational Aptitude Battery (ASVAB), called the Armed Forces Classification Test (AFCT) after enlistment, in the hope that they will then qualify for more occupations.

This study examines the aspects that are associated with success or failure on the second exam for 35 different occupational qualifications. Predictive models were created for the different occupational categories using these observations with as many as six predictor variables for each model. One of the predictor variables that occurred in many of the models was the time between the administrations of the two exams. Over 500 observations were examined and it was shown that there were increases in qualification for all occupations.

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AND ITS USE AS A FORCE SHAPING TOOL**

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ABSTRACT

In an attempt to balance the manning of the United States Navy, the "Perform to Serve" program was instituted. As a part of this program, sailors are encouraged, and often required, to retake the Armed Services Vocational Aptitude Battery (ASVAB), called the Armed Forces Classification Test (AFCT) after enlistment, in the hope that they will then qualify for more occupations.

This study examines the aspects that are associated with success or failure on the second exam for 35 different occupational qualifications. Predictive models were created for the different occupational categories using these observations with as many as six predictor variables for each model. One of the predictor variables that occurred in many of the models was the time between the administrations of the two exams. Over 500 observations were examined and it was shown that there were increases in qualification for all occupations.

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EXECUTIVE SUMMARY

The United States Navy instituted the Perform to Serve program to help achieve proper Total Force Management. As a part of this program, sailors in overmanned career fields may be required to change their rating to an undermanned field. In many instances this would require the sailor be re-examined on the Armed Services Vocational Aptitude Battery (ASVAB) to be qualified for one of these undermanned fields.

This study began to determine which of the possible avenues of the Navy's education requirement was the most beneficial with regard to increasing the number of occupations an individual was qualified. Unfortunately, the education information was not accessible and only the available factors were evaluated.

Over five hundred observations were modeled into thirty five different career field qualifications using six predictor variables. These observations were the only observations collected that contained both examinations, but these were not necessarily individuals who were retesting due to the Perform To Serve program. Two models were created for each of the career fields, one that contained all of the predictors and another that contained only the predictors with statistical significance. The six predictor variables utilized were, race, age at the administration of the second exam, the time elapsed between the two exams, the points that the individual missed qualification on the first exam, gender, and the education level at the second exam. Of these six predictors, three were common in the final model for many of the ratings; race, the time between exams, and the number of points below the qualification threshold on the first exam. It can be concluded that a sailor desiring a rating conversion should be administered the AFCT if he or she was near the threshold for the desired rating and has experienced some duties in the United States Navy.

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I. INTRODUCTION

A BACKGROUND

Total Force management has been a concern of the United States Navy since the military became an all-volunteer force in 1973. Proper Total Force management would deliver appropriately manned career fields and would achieve optimum retention levels to maintain a balance between experienced personnel and new recruits. Poor Total Force management can lead to problems in retaining high quality sailors. Promotion and retention tend to be too low in overmanned career fields, because upward mobility is limited in those fields. Conversely, in an undermanned career field, it is difficult to get required tasks accomplished. In addition, an undermanned career field fosters an environment with low morale because the individuals in the career field are required to work longer hours to make up for the low number of personnel. This intense work environment can produce resentment and distaste for the Navy, resulting in lower retention.

The Perform to Serve (PTS) program, instantiated in March 2003, was designed as a force-shaping tool to achieve proper manning levels and Total Force management. It allows sailors from overmanned career fields ("ratings") to transition (or "convert") to undermanned ratings. As a part of the PTS program, sailors wishing to convert ratings are required to submit their most recent Armed Services Vocational Aptitude Battery (ASVAB) subtest scores along with their application. This requirement encourages sailors with low scores to retake the ASVAB, which is referred to as the Armed Forces Classification Test (AFCT) after enlistment, with a goal of increasing their scores and the possibility of conversion. All sailors are required to describe the educational programs they have completed in preparation for the AFCT prior to its administration. Functional skills classes, which focus on refreshing basic math and English skills, are available through the Navy college campuses and fulfill this requirement. Completion of basic math and English college courses also fulfill this requirement.

B.   PURPOSE OF THE STUDY

The ASVAB is a multiple-choice aptitude exam, but experience has shown that it is not truly an aptitude exam because there is a tendency for scores to increase with successive tests. Dr. Lisa Mills of the Navy's Selection and Classification office showed there were statistically significant increases between initial scores on the ASVAB and scores on the AFCT ($p<.01$, $n=106$). The increase has also been identified for armed forces applicants who are administered the ASVAB more than once at the Military Entrance Processing Stations. (Mills, 2004)

This study analyzes trends in AFCT scores and produces a model for each occupational field that predicts whether a sailor will qualify for that field prior to the test's administration. The questions that are answered are: Can a useful model for predicting outcomes for the AFCT be constructed? What factors are most associated with the observed increases in ACFT scores? Which career fields see the largest numbers of new qualifiers after successive exams?

The Navy will be able to utilize the findings of this analysis to optimize its Human Capital. The proper placement of sailors, after an accurate assessment of their abilities, in occupations which are challenging and rewarding should ultimately bolster retention and productivity. This study will help the Navy target individuals that could qualify for undermanned ratings by taking the AFCT.

C   DATA

Demographic information on sailors to whom the AFCT had been administered is not centrally located.   After merging available data and accounting for missing observations, the final data set was small, with a size of 543. Ideally, the data set would have included each individual sailor's initial rating, education level at the initial exam, the education attained after enlistment, and basic demographic information. Unfortunately, this information was not available. The available data was examined through data analysis and predictive models for each rating. Much of the organization of the data was performed with Microsoft Excel while the merging of the data and the model creation and analysis utilized Insightful's S-Plus.

D OUTLINE OF STUDY

The next chapter presents a brief history of the Armed Services Vocational Aptitude Battery, how it is scored, and how the scores from the exam sections are used for career placement. Chapter III gives a preliminary analysis of the data while Chapter IV focuses on the creation of logistic regression models that can be used to help predict whether an individual would qualify for a specific career field. Conclusions and recommendations are provided in the final chapter.

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II. HISTORY AND LITERATURE REVIEW

A. ASSESSMENT TESTING

Many training programs have a pre-enrollment screening process that attempts to predict the successful completion of training and how successful individuals will be in using that training. This screening is usually complex and highly individualized. Aptitude testing is a large part of this screening process.

The Boston Elevated Railroad was the first American company to create an aptitude test for selecting personnel. Since the creation of this exam in the early 1900's, research on the validation of aptitude testing has resulted in stronger relationships between test results and job performance (Ray, 1992).

Aptitude testing has been the source of much controversy. The Scholastic Aptitude Test (SAT) and the American College Test (ACT) are widely used to predict a student's success in the first year of college. Both of these exams have undergone scrutiny as to their predictive ability and impartiality.

Proponents of aptitude testing claim that it: (a) closely approximates real life because it uses job-related simulations, (b) has precision and depth, (c) is valid and reliable, and (d) directly identifies training needs (Ray, 1992).

B. ARMED SERVICES VOCATIONAL APTITUDE BATTERY

The ASVAB can be traced back to the Army Alpha and Army Beta Tests used during the end of World War I. These tests were used, as the ASVAB is today, to give the leadership a measure of a soldier's ability and then to assign the soldier to an appropriate occupation. The Alpha Test was a verbal exam consisting of eight subtests which included verbal ability, numerical ability and a test designed to measure the examinee's ability to follow directions. The Beta Test was a non-verbal group administered test used for those individuals for whom English was a second language or who were illiterate (Eitelberg, 1984).

During World War II, the Army replaced the Alpha & Beta Tests with the Army General Classification Test (AGCT). This test consisted of 150 questions on vocabulary, arithmetic problems, and block counting. More than 9 million recruits took this test during World War II. Approximately 63% of these recruits had a verbal ability of above a third grade level (Powers, 2004).

The Selective Service Act of 1948 mandated that a single standard test be used to evaluate applicants for all branches of the Armed Forces. This new test, first used in 1950, was called the Armed Forces Qualification Test. However, each of the services still used its own individual batteries for assignment purposes until the development of the ASVAB (Ray, 1992).

The Department of Defense decided in 1974 that all services should use a single test battery to measure enlistment qualification and to assign recruits to the various occupations. However, each service was allowed to develop its own criteria for the assignments. The ASVAB has been the measure for eligibility and assignment since January 1, 1976 (Eitelberg, 1984).

The ASVAB is administered either via computer or with the use of paper and pencil. Military applicants who take the ASVAB at the individual Military Entrance Processing Stations (MEPS) are given the Computer Adaptive Test (CAT-ASVAB), but the paper and pencil test is still used at the Mobile Examination Test (MET) sites and during high school examinations. The scores produced from the high school examinations may be used for enlistment purposes provided that the student is either a junior or a senior. The main purpose of the high school ASVAB is to introduce the students to the military by showing them career fields they might be interested in and ones for which they have the aptitude.

Recently, two subtests have been removed from exams given at the MEPS. These are the Numerical Operations and Coding Speed tests: both are speed tests and require quick calculations (Numerical Operations has 50 questions with a three-minute time limit and Coding Speed has 84 questions with a seven-minute time limit). These subtests have little benefit in the assignment of occupations. The CAT-ASVAB has an additional subtest that can not be replicated through the paper medium, called Assembling Objects.

The ASVAB subtests, their respective descriptions, number of questions, and time allotted are listed in Table 1.

Table 1.   ASVAB Subtest Descriptions

Subtest name	Description	Number of questions	Testing time (minutes)
General Science (GS)	Measures knowledge of physical and biological sciences	25	11
Arithmetic Reasoning (AR)	Measures ability to solve arithmetic word problems	30	36
Word Knowledge (WK)	Measures ability to select the correct meaning of words presented in context and to identify the best synonym for a given word	35	11
Paragraph Comprehension (PC)	Measures ability to obtain information from written passages	15	13
Numerical Operations (NO)	Measures ability to quickly perform arithmetic computations	50	3
Coding Speed (CS)	Measures ability to quickly use a key in assigning code numbers to words	84	7
Auto and Shop Information (AS)	Measures knowledge of automobiles, tools, and shop terminology and practices	25	11
Mathematics Knowledge (MK)	Measures knowledge of high school mathematics principles	25	24
Mechanical Comprehension (MC)	Measures knowledge of mechanical and physical principles and ability to visualize how illustrated objects work	25	19
Electronics Information (EI)	Measures knowledge of electricity and electronics	20	9

Only four of the subtests are used to measure the AFQT which determines an applicant's enlistment eligibility: Word Knowledge (WK), Paragraph Comprehension (PC), Arithmetic Reasoning (AR) and Mathematics Knowledge (MK) of which the WK and PC are given a weight twice that of the other two. The other six subtests, along with these four, are used to calculate an applicant's line scores which determine occupational qualification.

The scores reported from the ASVAB are normalized scores indicating the percentile in which the applicant scored. Once a military applicant takes the ASVAB, the

AFQT is computed and the applicant is placed into one of the categories in Table 2. Each category is associated with an approximate level of trainability.

Table 2.   Armed Forces Qualification (AFQT) Categories by Corresponding Percentile Scores and level of "Trainability"

AFQT Category	AFQT Percentile Score	Level of Trainability
I	93-99	Well above average
II	65-92	Above average
IIIA	50-64	Average
IIIB	31-49	Average
IV	10-30	Below average
V	1-9	Well below average

Source: Mark J. Eitelberg, Manpower for Military Occupations, office of the assistant Secretary of Defense (Force Management and Personnel), 1988, p. 74

Categories I-IIIA account for the top 50% of the AFQT scores and applicants in these groups are regarded as high in quality. Applicants whose scores fall in Category V generally read in the 5th to the 7th grade level and are excluded from enlistment. The National Defense Authorization Act of 1981 limits the recruitment of applicants in Category IV to 20%.

These categories relate to the general "trainability" of applicants and are a predictor of the applicants' likelihood to attrite. During the first term of enlistment, individuals in the top three categories score higher on job tests, get better supervisory ratings, and receive faster promotions than individuals with AFQT scores below 50% (Congressional Budget Office, 1986).

C. OCCUPATION ASSIGNMENT PROCESS

The administration of the ASVAB is the first step in the processing of a military applicant. An applicant who is qualified then undertakes the job selection process.

Navy recruits are assigned jobs at the MEPS by a Navy classifier. A Navy classifier submits a variety of variables to the Classification and Assignment within Pride (CLASP) computer system. After a recruit's ASVAB scores, high school graduation status, physical qualifications, citizenship, and minority group status are submitted to the system, the classifier will also submit a maximum of 15 job preferences for the recruit. Using this information, the CLASP system computes a pay-off index for every rating in the Navy by first computing a weighted average of six indicators: (1) predicted probability of school success, (2) technical aptitude/occupation complexity, (3) Navy priority/individual preference, (4) the rating's fill rate, (5) the minority fill rate, and (6) the predicted probability of attrition. The first two indicators receive the greatest weight in the final calculation. CLASP eliminates all jobs for which the applicant does not qualify and produces the top 15 occupations for the current recruiting month. The applicant must then either select from one of these positions, enlist as a general detail (GENDET) recruit, or try to bargain to override the CLASP system (Asch, Karoly, 1993). Approximately 20% of new recruits enlist as GENDETs which includes the seaman (SN), airman (AN), and fireman (FN) ratings. Different ratings require different lengths of enlistment contracts. The cut-off score for each career field is listed in Appendix A.

D. PERFORM TO SERVE

The Navy is currently at the proper end strength and is in a position where it can align the force to achieve the right skills mix of sailors in the fleet. The Navy intends to accomplish this task through the Perform To Serve (PTS) program as stated in the Navy's Perform to Serve Standard Operating Procedures:

> PTS is a centralized reservation system that requires all first term Sailors to receive authorization from the Navy Personnel Command before they reenlist. Initial implementation will focus on CREO 3 ratings. The first and most important step in the process is a retention recommendation from the Sailor's commanding officer. By centralizing reenlistment authority, Navy leadership will have the ability to shape the force by

increasing the number of Sailors in undermanned ratings and reducing the number of Sailors in overmanned ratings. Sailors will be the primary beneficiaries of this new system as they will have improved advancement opportunity. The Navy will also benefit from improved manning and combat readiness capability. (Navy Perform to Serve Standard Operating Procedures)

All first-term sailors desiring re-enlistment or transfer orders who are in Career Reenlistment Eligibility Opportunity (CREO) 2 and 3 ratings must submit, within 12 months of their End of Active Obligated Service (EAOS) or Projected Rotation Date (PRD), a PTS package. The CREO categories explain what a given career field's manning status is: CREO 1 is undermanned, CREO 2 is appropriately manned and CREO 3 is overmanned. The PTS program is centrally managed and therefore has the ability to control manning levels by selectively allowing re-enlistments or transfers in ratings.

One of the goals of PTS is to transfer qualified personnel from CREO 3 to CREO 1 ratings. Sailors who want a rating change must include their ASVAB line scores with their PTS package. The line scores are the standardized scores the sailor received in each section of the ASVAB. These scores are used to determine the career fields into which an individual is qualified to be placed. Sailors who have relatively low scores are encouraged to retake the ASVAB, which is called the Armed Forces Classification Test (AFCT) after enlistment.

III. DATA AND PRELIMINARY ANALYSIS

A. SOURCE

Two main sources provided data for this analysis: the Defense Manpower Data Center (DMDC) and the Department of the Navy's Selection and Classification Office. The data provided by the Selection and Classification office contained the ASVAB and AFCT scores for more than 600 sailors who were administered the AFCT in 2003 or 2004. These observations were the only ones that were collected for individuals that were interested in changing their ratings and had been administered the AFCT. This file was merged with the DMDC files containing basic demographic information and historical service entry data. Unfortunately, many sets of scores did not have a corresponding file of demographic information.

B. CHARACTERISTICS

The merged sample data contains the initial ASVAB scores and the AFCT scores for 543 individuals. The gender, race, date of entry into the Armed Forces, and birth date were included for most of the individuals but neither their initial rating nor what they studied after taking the ASVAB and before taking the AFCT were documented. Table 3 shows the basic characteristics of the data.

Table 3.   General Characteristics of Sample Data

Characteristic	Number	Percentage of Subset	Percentage of Total
Male	392		72.2%
Asian	30	7.7%	5.5%
Black	128	32.7%	23.6%
Indian	4	1.0%	0.7%
White	145	37.0%	26.7%
Unknown	85	21.7%	15.7%
Female	136		25.0%
Asian	4	2.9%	0.7%
Black	56	41.2%	10.3%
Indian	3	2.2%	0.6%
White	40	29.4%	7.4%
Unknown	33	24.3%	6.1%
Unknown	15		2.8%

Comparison of the average scores from the ASVAB and AFCT from the sample by subtest shows that there is an increase in all sections of the exam. These increases are shown in Figure 1 and in Table 4.

Figure 1.   Mean Subtest Scores, ASVAB and AFCT

Average Subtest Scores
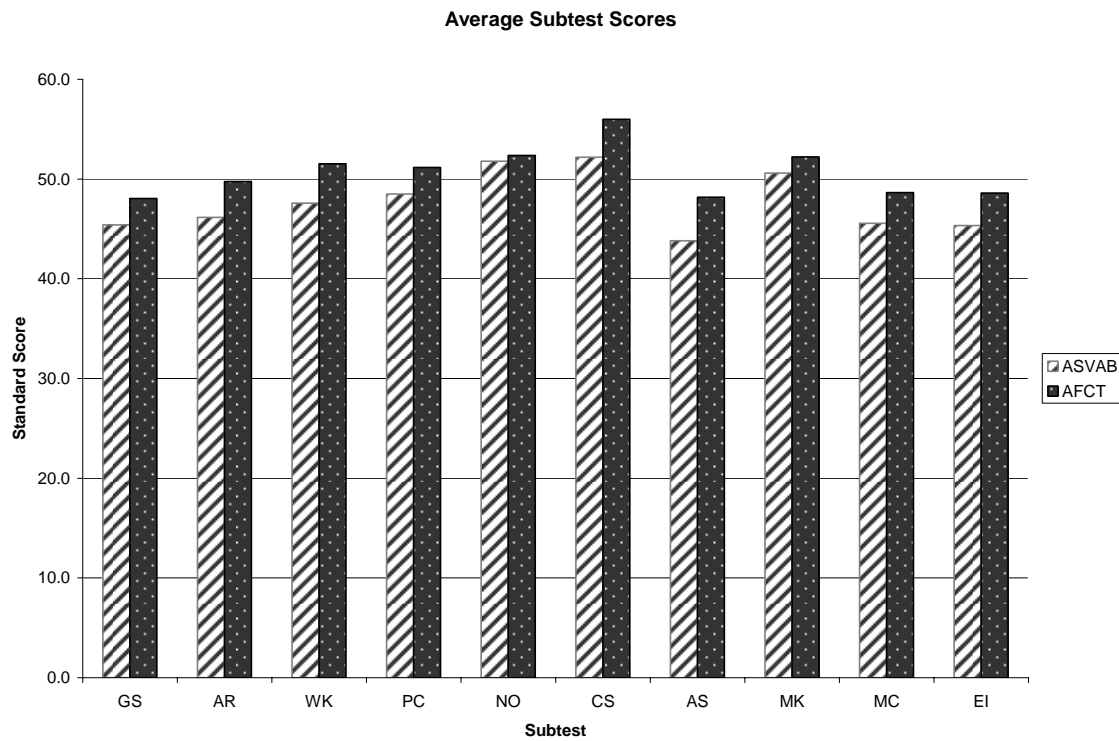
Table 4.   Mean Subtest Scores, ASVAB and AFCT

		GS	AR	WK	PC	NO	CS	AS	MK	MC	EI
ASVAB	Mean	45.4	46.2	47.6	48.5	51.8	52.2	43.8	50.6	45.6	45.3
	St Dev	6.8	5.5	5.5	6.1	7.7	7.8	7.7	6.2	7.3	7.2
AFQT	Mean	48.1	49.7	51.5	51.2	52.4	56.0	48.2	52.2	48.6	48.6
	St Dev	7.2	6.6	5.8	6.5	9.9	10.1	7.9	6.4	8.0	7.6

To help explore this average increase, Tables 5, 6, and 7 partition the observations into different subsets by gender, race, and length of time between the two exams respectively.

Table 5.   Average, Average Increase, and Standard Deviation in ASVAB Subtest
Score, By Gender

Gender		GS	AR	WK	PC	NO	CS	AS	MK	MC	EI	VE
Female	Score	44.3	46.3	47.4	49.6	52.9	53.7	39.2	52.0	42.8	42.7	48.0
	Increase	2.6	3.0	4.0	2.1	0.7	4.3	5.3	0.7	2.9	3.2	3.4
	St. Dev.	6.4	5.7	6.2	5.5	8.3	9.6	6.5	5.6	6.9	7.1	5.3
Male	Score	46.6	46.8	48.2	48.8	51.2	51.5	46.2	50.3	47.5	47.2	48.3
	Increase	2.4	3.4	3.6	2.5	0.4	3.1	3.6	1.8	2.7	2.9	3.5
	St. Dev.	6.5	6.2	6.1	7.1	9.3	8.9	6.6	6.0	7.1	7.7	5.4

Table 6.   Average, Average Increase, and Standard Deviation in ASVAB Subtest
Scores, By Race

Race		GS	AR	WK	PC	NO	CS	AS	MK	MC	EI	VE
Asian	Score	45.3	49.0	45.6	46.4	52.8	52.7	43.4	53.2	46.4	46.5	45.9
	Increase	4.6	4.9	5.0	5.4	0.5	3.9	5.7	1.8	6.3	4.7	5.9
	St. Dev.	9.6	8.6	5.5	7.2	3.9	7.2	7.4	6.9	8.0	8.0	6.7
Black	Score	44.4	45.4	47.9	48.5	51.8	51.7	41.6	50.6	50.6	44.3	48.0
	Increase	2.1	3.0	4.0	2.3	0.0	2.9	4.2	0.9	2.9	3.1	3.7
	St. Dev.	6.2	6.0	6.4	6.7	10.4	6.0	6.5	5.8	6.9	7.6	5.2
Indian	Score	48.3	45.5	45.8	50.1	50.3	44.5	45.5	49.9	43.9	44.6	47.6
	Increase	3.0	4.3	7.6	1.9	1.1	2.7	4.7	0.4	4.9	4.0	5.3
	St. Dev.	6.3	5.4	8.4	3.0	12.9	6.0	7.5	6.0	8.6	6.1	3.8
White	Score	47.1	46.9	48.3	49.7	50.9	52.3	46.8	50.4	47.9	46.9	48.6
	Increase	2.9	3.8	3.6	2.7	0.4	3.1	3.8	2.3	2.8	3.2	3.6
	St. Dev.	6.6	5.7	5.9	6.9	9.6	7.9	6.8	6.1	7.5	8.0	5.1
Unk	Score	45.9	45.6	46.5	48.0	51.5	51.5	40.3	53.3	47.0	46.0	47.0
	Increase	1.1	1.7	5.2	4.1	1.9	2.0	5.2	1.2	1.2	3.4	4.9
	St. Dev.	5.6	6.7	5.0	6.3	7.2	8.8	6.3	6.5	7.3	7.0	4.2

Table 7.　　　　Average Increase and Standard Deviation in Subtest Scores, By Time Between Exams (yrs)

Time		GS	AR	WK	PC	NO	CS	AS	MK	MC	EI	VE
0-1	Increase	1.3	2.4	1.6	-1.0	-0.1	2.3	4.3	0.4	4.4	4.7	0.8
	St. Dev.	6.4	6.4	6.9	6.6	8.8	8.8	4.9	7.5	7.9	8.8	6.6
1-2	Increase	2.1	2.5	3.1	2.8	1.1	2.8	4.2	1.5	2.7	3.4	3.3
	St. Dev.	6.7	6.1	6.4	6.1	8.8	8.2	6.8	6.5	7.8	7.1	4.7
2-3	Increase	2.6	3.5	3.3	3.4	2.5	5.4	2.6	2.3	4.1	2.3	3.3
	St. Dev.	5.8	6.6	5.4	6.2	7.5	9.4	6.8	5.4	7.4	8.1	5.7
3-4	Increase	1.1	2.0	3.7	2.6	-1.0	2.7	5.1	0.4	2.8	4.5	3.9
	St. Dev.	6.8	6.6	5.0	6.8	9.9	8.0	6.7	6.5	6.7	9.0	4.3
4-5	Increase	4.4	4.8	3.5	3.1	-0.5	5.0	4.7	2.1	1.1	2.8	3.2
	St. Dev.	6.8	7.4	6.0	6.4	13.6	13.1	6.4	7.2	8.8	7.2	5.5
5-10	Increase	4.8	6.3	5.9	5.1	0.0	6.0	5.0	2.7	4.0	2.7	5.6
	St. Dev.	6.3	6.8	4.4	6.5	11.9	13.4	7.0	5.6	6.4	7.9	4.4
>10	Increase	5.1	3.6	9.2	5.4	-1.3	5.1	6.7	2.0	3.2	7.1	10.1
	St. Dev.	7.3	7.7	7.4	8.8	10.0	8.7	7.0	7.7	6.1	8.1	5.7

　　　　The items of concern for this study are the subset scores and their relation to the occupational fields for which an individual may or may not qualify.

　　　　The Navy Selection and Classification Office provided the qualifying scores for eighty-eight different navy occupations. Three of these occupations are Seaman (SN), Airman (AN), and Fireman (FN). Anyone who is capable of enlisting into the Navy is automatically qualified for one of these three jobs. The Musician (MU) rating also does not require any specific qualification through the ASVAB, although the individual must be musically inclined to be accepted into this rating.

　　　　Using the qualifying scores alone and not including physical requirements or ability to secure a security clearance, it was observed that an individual would, on average, qualify for an increased number of occupations upon the administration of the AFCT. Many sailors who retake the ASVAB are in occupations that may not have required high qualification scores and believe that because of their experience, they could achieve better scores and reclassify for a more rewarding position. Among the 543

observations in the data set, sailors could expect to qualify for an average of 20 additional occupations just by retaking the exam. Male participants performed slightly better than the women in the data set; men averaged over 20 and women slightly fewer than 19 additional qualifications.

Appendix C lists the 81 occupations for which qualification is required and their respective increases in number of individuals qualifying with the AFCT. These increases in qualification were also divided into subsets for illustration purposes. Since many of the observations were missing demographic data the sum of the subgroups may not equal the observations for the total population. Many of the occupational requirements are shared by several occupations and therefore only 35 different sets of qualification standards were selected for study.

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IV. MULTIVARIATE ANALYSIS

The core interest of this study is to demonstrate how a number of known factors contribute to an increase in the number of occupations for which a sailor is qualified after the administration of the Armed Forces Classification Test. In order to explain these increases, the data set was modified to include numerous fields including time between exams, a Boolean indicator of whether a sailor qualified for the individual occupations on the first and second exam, a Boolean indicator of whether there was an increase in qualification between the exams, and a field quantifying the number of points by which the sailor fell short of qualifying for the particular occupation on the first exam. The increases in 35 different occupational qualifications were modeled using Insightful's S-Plus.

The models were created using variables, displayed in Table 8, that would be known to a command or an individual before the administration of the AFCT and that could possibly predict its outcome.

Table 8.   Model Variable Description

Name	Type	Description	Values
Increase.xx	Boolean	Indicates whether a sailor qualified for occupation xx on the AFCT but not on the ASVAB	1 if true 0 if not true
Race	Categorical	Indicates the race of the Sailor	Asian, Black, Indian, White, Unknown
Sex	Categorical	Indicates gender of Sailor	Male, Female
CUR.ED	Categorical	Indicates the education level of the Sailor at the second exam	11-Less than HS Diploma 21-Test based equivalency 25-Home study Diploma 26-Adult Diploma 31-High School Diploma 41-One Semester college 44-Associate's degree 45-Prof. Nursing Diploma 51-Baccalaureate degree 64-Doctorate 99-Unknown
Age.at.Test2	Numeric	The age of the sailor when the second exam was administered	18.8 - 43.4
years.between.tests	Numeric	Time between the administration of the two exams	.77 - 17.5
xx.M	Numeric	The number of points the sailor missed qualifying for rating xx on the first exam	Negative

For each occupational group, a subset that contained records only for those sailors who were not initially qualified for the occupations in that group was created. These subsets were used in the model creation because an increase in the number of occupations that a sailor would be qualified could be modeled only from these observations. The subsets also ignored any observations that contained instances where qualification was achieved on the first exam but not on the second. This method could be implemented because if a sailor was qualified for an occupation after the initial ASVAB then there would be no need to have a second exam administered.

The logistic form of the generalized linear model was used for each set of occupations because the dependent variables are dichotomous. Based on these logit models, the conditional probability that the ith sailor will qualify for a particular occupation is

$$P_i = \frac{1}{(1 + e^{-L_i})}$$

where the logit L_i links the probability P_i to the predictors as follows:

$$L_i = \beta_0 + \sum_{k=1}^{K} \beta_k x_{ik}$$

where K is the number of predictor variables, x_{ik}, $i = 1,..,543$; $k = 1,..,K$, represents the value of the kth predictor variable for the ith individual, and $\beta_o,..,\beta_K$ are the model parameters.

One possible predictor of increase in qualification is the time between exams. Another is the age of the sailor. These two variables relate to the maturity of the individuals and the depth of their familiarity of the Navy. Although the ASVAB/AFCT is designed to measure aptitude, it is reasonable to believe that a more mature individual would score higher on an exam especially when immersed in a highly technical environment. Unfortunately, the age variable has the greatest number of missing values among the variables in the data set.

All occupational groups were initially modeled with all variables included. The tables containing the coefficients, standard errors, and t-values are listed in Appendix D. In addition to those figures, tables of their respective misclassification rates are also given. Some of the initial coefficients are statistically significant as demonstrated by the t-values.

As shown in Appendix C, the career fields have varying rates of initial qualification. These varying rates of initial qualification produce different sample sizes for each model. However, most of the career fields have more than 120 observations utilized in the model fitting and therefore statistical significance is determined by t-values with absolute values greater than 1.645 at the 10% level.

To illustrate the process utilized for each of the occupational career field groups the Information System Technician Submarine (ITS) career field is examined in detail. This career field had over a 300% increase in qualification on the AFCT and is CREO group 1 demonstrating the benefits of re-administering the ASVAB to balance the manning in the various occupations. Table 9 shows the initial qualification for ITS and the increase after the AFCT including the increases for male, female, and the annotated race categories. In this instance there is one observation, under initial qualification, for which gender was not indicated.

Table 9.   Information System Technician Submarine (ITS) AFCT Increase

ITS – Information System Technician (Submarine)			
	Initial Qualification	Additional Qualification	Percent Increase
All groups n=543	21	66	314.3
White n=185	5	35	700.0
Black n=184	4	11	275.0
Asian n=34	2	11	550.0
Male n=392	18	53	294.4
Female n=136	2	13	650.0

The initial model for ITS contained all available variables as shown in Table 10. Inspection of the associated *t*-values indicated that only two of the variables are significant at the 10% level.

Table 10.   Coefficients, Std Error, and t-values for initial ITS model

	Value	Std. Error	t value
(Intercept)	-2.7405	99.6758	-0.0275
RACEBLACK	-0.6653	0.9860	-0.6747
RACEINDIAN	-7.8762	43.2016	-0.1823
RACEUNK	-1.3676	1.9746	-0.6926
RACEWHITE	0.1919	0.8977	0.2138
CUR.ED21	17.9196	113.1149	0.1584
CUR.ED25	-0.4610	140.9029	-0.0033
CUR.ED26	0.3837	110.3468	0.0035
CUR.ED31	7.3576	99.6341	0.0738
CUR.ED41	-0.0206	104.4994	-0.0002
CUR.ED44	10.6655	99.6414	0.1070
CUR.ED45	0.8666	140.9134	0.0061
CUR.ED51	0.8498	121.9964	0.0070
CUR.ED99	0.3080	107.5087	0.0029
SEX	0.0862	0.7565	0.1139
Age.at.Test2	-0.1804	0.1325	-1.3622
years.between.tests	0.3975	0.1673	2.3755
ITS.M	0.1442	0.0304	4.7493

In this initial model, the intercept represents a sailor who is Asian, has an education of less than a high school diploma, is female, is zero years old, experienced no time between exams, and missed qualification on the previous exam by zero points. The value of the intercept, -2.7405, indicates that a sailor matching the intercept criteria would only have a 6.06% probability of attaining qualification on a second exam. Utilizing this model in which a 19.68 year old white male with a high school diploma and 1.25 years since the first exam that he missed qualification for ITS by 26 points would have an estimated probability of achieving qualification on the second exam computed by first calculating that sailor's estimated logit by:

$$\hat{L}_i = -2.745 + 0.1919(White) + 7.3576(CUR.ED31) + .0862(Male) + -.1804(19.68\,yearsold) + .3975(1.25\,yearsbetweenexams) + 0.1442(-26\,points) = -1.9119$$

and then converting to the estimated probability according to equation (X) above:

$$\hat{P}_i = \frac{1}{(1 + e^{1.9119})} = .1288.$$

Many of the estimated coefficients for the initial model have standard errors greater than the coefficients producing *t*-values less then 1. As stated previously, only two of the coefficients had statistically significant values: those variables were ITS.M and years.between.tests. It should be noted that the lack of significance only indicates that the coefficient (or corresponding predictor variable) is not needed in the model when all other coefficients are present.

To determine whether the coefficients lead to a good predictive model, a misclassification table was constructed. The misclassification table compares actual values of whether a sailor had qualified for the ITS rating or not and the predicted values derived from the model formula. The misclassification rate for this model was .07, as shown in Table 11. This indicates that the coefficients create a very accurate model to predict the outcome of the AFCT for the ITS rating. The accuracy is most likely linked to the fact that most of the sailors did not qualify for ITS on the AFCT. 198, or 89%, of the 223 observations that were used in the creation of this model did not qualify after the AFCT. A blanket prediction that no sailor would qualify would only be incorrect 11% of the time according to these results.

Table 11.   Misclassification Table for initial ITS model

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	195	3
1	12	13
Naïve Misclassification Rate	0.11	
Prediction Misclassification Rate	0.07	

The *t*-values were integral in determining which variables had predictive ability and which could be omitted from the logistic models. Backward elimination was used to remove variables that were not statistically significant, with only one of these variables being removed during each iteration. A model for ITS with statistically significant coefficients is displayed in Table 12. . Only the variables representing the time between exams and the points below qualification on the first exam remain.

Table 12.   Coefficients, Std Error, and t-values for second ITS model

	Value	Std. Error	t value
(Intercept)	0.5403	0.4940	1.0937
years.between.tests	0.1573	0.0481	3.2692
ITS.M	0.1143	0.0176	6.4840

Using the same example as for the initial model, the male sailor would have a lower estimated probability computed from the refined model in the following way.

$$L_i = 0.5403 + .0.1573(1.25\, yearsbetweenexams) + 0.1143(-26\, points) = -2.2349$$

$$P_i = \frac{1}{(1 + e^{2.2349})} = .0967$$

The misclassification table for the newer model, Table 13, showed a slight decrease in accuracy. The model might have better predictability than the initial model on a new data set because the possibility of over-fitting for the initial model exists.

Table 13.   Misclassification Table for second ITS model

OBSERVED VALUES		PREDICTION VALUES	
		FALSE	TRUE
	0	284	8
	1	29	12
Naïve Misclassification Rate	0.12		
Prediction Misclassification Rate	0.11		

Appendix E presents the models with the most statistically significant terms, determined by backwards elimination, based on the provided data. The most descriptive variables appear to be race, the variable representing the time between the two exams, and the number of points by which qualification was missed on the first exam. Two of the analyzed occupations do not have a second model, the Advanced Electronics Computer Field rating and the Culinary Specialist rating. All attempts to create models for these two ratings led to predictions of either all failing to achieve qualification, in the case of the AECF rating, or all succeeding, in the case of the CS rating, on the second exam.

The predictive ability of the resulting logistic equations was tested and their misclassification tables and rates are displayed in Appendix E. The models with the lowest misclassification rates reflect upon jobs that had either a very high qualification or a very low qualification on the second exam. The models do not have good predictive ability for any occupation that maintained qualification rates of near 50%.

V.   CONCLUSION

This project focused on the relationship between the Armed Services Vocational Aptitude Battery (ASVAB) and the Armed Forces Classification Test (AFCT) and how predictive models could assist in the Perform to Serve program. The initial goal of this project was to evaluate which education programs lead to the highest increase in the number of occupations that a sailor would be qualified after the AFCT. Unfortunately, this information was not available. Without education program information, the increase was modeled using the available factors.

There were six factors that were available: race, current education, sex, age at the second exam, time between exams, and the number of points below the qualification threshold on the first exam. Surprisingly, the level of education was a significant variable for only three of the occupational groups. As stated previously, differences in education level that took place between the administrations of the two exams were not recorded in this data. This difference in education level might be contained in the time between exams variable which appeared as a significant predictor in most of the occupational models. Table 14 displays the occupational groups and all of the available variables. Included in the table is an indicator of the statistically significant variables for each of the groups of occupational ratings.

Table 14.   Final Model Variables

Rating	Race	CUR ED	Sex	Age at Test2	Years Between Tests	XX.M
AB, ABE, ABF, ABH			X			X
AC					X	X
AD, AO	X					X
AE, AT, AV	X				X	X
AECF, CTM, ET, FC, STG						
AG, CTT, CTI					X	X
AIRC, AIRR, AW, TM	X					X
AM, AME					X	X
AS, CE, UT	X					X
AZ, CTO, LI, PH, SK	X				X	X
BU, EO, SW	X					X
CM	X					X
CTA					X	X
DC, HT, MR	X				X	X
DK	X				X	X
DT	X		X			
EA	X					X
EM, GSE, IC, MMS	X	X			X	X
EN, GSM, MM	X				X	X
ETS, FT, SECF, STS, MT	X				X	X
GM	X				X	X
HM	X				X	X
IS, PC	X				X	X
IT	X				X	X
ITS					X	X
JO	X				X	X
LN					X	X
MA	X				X	X
MN, PR	X				X	X
CS						
CSS,SKS, YNS					X	X
OS	X	X			X	
PN, RP, YN		X			X	X
QM	X				X	
SH	X				X	X

Prior to the administration of the AFCT, the Navy requires that a sailor complete education in addition to that attained before the initial ASVAB. This requirement indicates the relationship between learning and occupational qualification yet the Navy will allow individuals to enlist and be assigned an occupation resulting from scores attained on an ASVAB that is administered while the individual is still a student in high school. The ASVAB is administered to high school students and scores are valid for enlistment purposes if the student was in grade 11 or 12 at the time of the exam. These

students could possibly have two full years of schooling after taking the ASVAB but prior to their enlistment. This additional schooling could possibly lead to higher subtest scores on the ASVAB and a greater number of available occupations.

In order to properly address the benefits of the Navy's retesting program, a more complete data set would be required. This set should include in addition to the variables utilized in this study, the avenue of education attained after the ASVAB was administered but prior to the AFCT to include the subjects studied, the work performed after enlistment, the grade level when the ASVAB was initially administered, and the geographical area where high school was attended.

An avenue of further study should include assessing the possibility of testing sailors at the end of their initial boot camp training to increase the qualification rates for occupations that were undermanned. This new study could also include the cost benefit of the proposed program. It is likely that such a program will not show the dramatic increase in qualification rates as was seen in the data of this thesis. The sailors in the data set used in this thesis elected to take the AFCT because of low initial scores and were more likely to score higher than on their original ASVAB.

This study concluded that there are statistically significant predictors of success or failure on the AFCT. The results of this study reaffirm the notion that the ASVAB is not a true examination of one's aptitude because improvement was shown. The time between exams was a statistically significant variable in over 70% of the evaluated groups of ratings, indicating that simply retesting sailors will aid the Navy in its force management through the Perform to Serve program.

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APPENDIX A: OCCUPATIONAL CUT OFF SCORES

Rating	Level	Equation	Min Score
AB	1	AR + AS + MC	130
ABE	1	AR + AS + MC	130
ABF	1	AR + AS + MC	130
ABH	1	AR + AS + MC	130
AC	1	AR + MK + MC + VE	210
	OR		
AC	2	VE + MK + MC + CS	210
AD	1	GS + AR + MK + EI	190
AE	1	GS + AR + MK + EI	218
AECF	1	AR	57
AECF	1	MK	57
AECF	1	GS + MK + EI	156
AECF	1	GS + AR + MK + EI	218
AG	1	GS + MK + VE	165
AIRC	1	GS + AR + 2MK	196
AIRR	1	GS + AR + 2MK	196
AK	1	AR + VE (merged with SK)	103
AM	1	AR + AS + MC	164
AME	1	AR + AS + MC	164
AMH	1	AR + AS + MC	164
AMS	1	AR + AS + MC	164
AN	1	GS + AR	1
AO	1	GS + AR + MK + EI	190
AS	1	GS + AR + MK + EI	200

AT	1	GS + MK + EI	156
AT	1	GS + AR + MK + EI	218
AV	1	GS + AR + MK + EI	218
AW	1	GS + AR + 2MK	196
AZ	1	AR + VE	103
BU	1	AR + AS + MC	140
CE	1	GS + AR + MK + EI	200
CM	1	AR + AS + MC	158
CTA	1	MK + VE	105
CTI	1	GS + MK + VE	165
CTM	1	AR	57
CTM	1	MK	57
CTM	1	GS + MK + EI	156
CTM	1	GS + AR + MK + EI	218
CTO	1	AR + VE	103
CTR	1	AR + VE	110
CTT	1	GS + MK + VE	165
DC	1	AR+MK+AS+VE	200
	OR		
DC	2	MK+AS+AO	150
DK	1	AR + VE	105
DT	1	GS + MK + VE	149
	OR		
DT	2	CS + MK + VE	153
EA	1	GS + AR + 2MK	210
EM	1	AR+MK+MC+VE	210
EN	1	AR+MK+AO+VE	200
	OR		
EN	2	AR+MK+AS+VE	195

EO	1	AR + AS + MC	140
ET	1	AR	57
ET	1	MK	57
ET	1	GS + MK + EI	156
ET	1	GS + AR + MK + EI	218
ETS	1	GS + AR + MK + EI	222
	OR		
ETS	2	AR + MK + MC + VE	222
EW	1	GS + MK + VE	165
FC	1	AR	57
FC	1	MK	57
FC	1	GS + MK + EI	156
FC	1	GS + AR + MK + EI	218
FN	1	GS + AR	1
FT	1	GS + AR + MK + EI	222
	OR		
FT	2	AR + MK + MC + VE	222
GM	1	GS + AR + MK + EI	204
GSE	1	AR + MK + MC + VE	210
GSM	1	AR + MK + AS + VE	195
	OR		
GSM	2	AR + MK + AO + VE	200
HM	1	GS + MK + VE	149

HT	1	AR + MK + AS + VE	200
	OR		
HT	2	MK + AS + AO	150
IC	1	AR + MK + MC + VE	210
IS	1	AR + VE	108
IT	1	GS + AR + 2MK	222
	OR		
IT	2	GS + AR + MK + EI	222
ITS	1	VE	41
ITS	1	AR + MC + VE	147

ITS	1	GS + MK + EI	156
ITS	1	GS + AR + MK + EI	218
JO	1	AR + VE	110
LI	1	AR + VE	103
LLE(LN)	1	AR + WK	100
LLE(LN)	1	WK	45
	OR		
LLE(LN)	2	MK + VE	105
MA	1	AR + WK	100
MA	1	WK	45
MM	1	AR + MK + AS + VE	195
	OR		
MM	2	AR + MK + AO + VE	200
MMS	1	AR + MK + MC + VE	210
MN	1	AS + MC + VE	158
MR	1	AR + MK + AS + VE	200
	OR		
MR	2	MK + AS + AO	150
MS	1	AR + VE	89
MSS	1	GS + AR + MK + EI	200
	OR		
MSS	2	AR + MK + MC + VE	200
MT	1	AR + MK + MC + VE	222
	OR		
MT	2	GS + AR + MK + EI	222
MU	1	GS + AR	1
NC	1	AR + VE	105
NC	1	AR	50
OS	1	CS + MK + VE	157
	OR		
OS	2	GS + AR + 2MK	210
PC	1	AR + VE	108

PH	1	AR + VE	103
PN	1	MK + VE	105
	OR		
PN	2	CS + MK + VE	157
PR	1	AS + MC + VE	158
QM	1	AR + VE	97
RP	1	CS + MK + VE	157
	OR		
RP	2	MK + VE	105
SECF	1	AR + MK + MC + VE	222
	OR		
SECF	2	GS + AR + MK + EI	222
SH	1	AR + VE	96
SK	1	AR + VE	103
SKS	1	AR + MK + MC + VE	200
	OR		
SKS	2	GS + AR + MK + EI	200
SM	1	CS + MK + VE	147
	OR		
SM	2	GS + AR + 2MK	190
SN	1	GS + AR	1
SS	1	GS + AR + MK + EI	200
	OR		
SS	2	AR + MK + MC + VE	200
STG	1	AR	57
STG	1	MK	57
STG	1	GS + MK + EI	156
STG	1	GS + AR + MK + EI	218
STS	1	AR + MK + MC + VE	222
	OR		
STS	2	GS + AR + MK + EI	222
SW	1	AR + AS + MC	140
TM	1	GS + AR + 2MK	196

UT	1	GS + AR + MK + EI	200
YN	1	CS + MK + VE	157
	OR		
YN	2	MK + VE	105
YNS	1	AR + MK + MC + VE	200
	OR		
YNS	2	GS + AR + MK + EI	200

APPENDIX B: RATING CREO CATEGORIES FOR E1 – E4

RATING	CREO Category	RATING	CREO Category	RATING	CREO Category
ABE	2	CTR	2	LI	3
ABF	3	CTT	3	LN	3
ABH	3	DC	1	MA	2
AC	2	DK	2	MM	1
AE	3	DM	1	MN	3
AG	2	DT	1	MR	3
AM	2	EA	3	MT	3
AO	3	EM	2	OS	2
AS	3	EN	1	PC	3
AT	3	EO	2	PH	3
AW	2	ET	3	PN	2
AZ	2	ETS	1	PR	2
BM	3	FC	3	QM	1
BU	2	FT	3	RP	1
CE	2	GM	2	SH	3
CM	1	GSE	3	SK	3
CS	3	GSM	2	STG	3
CSS	1	HM	1	SW	2
CTA	2	HT	2	TM	3
CTI	2	IC	3	UT	2
CTM	3	IS	1	YN	3
CTN	2	IT	1		
CTO	3	JO	3		

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APPENDIX C: INITIAL OCCUPATIONAL QUALIFICATIONS AND INCREASES

AB, ABE, ABF, ABH – Aviation Boatswain's Mate (Equipment, Fuel, Handling)			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	334	142	42.5
White n=185	138	37	26.8
Black n=184	81	67	82.7
Asian n= 34	27	7	25.9
Male n=392	273	90	33.0
Female n=136	53	47	88.7

AC – Air Traffic Controller			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	86	196	227.9
White n=185	36	70	194.4
Black n=184	19	60	315.8
Asian n= 34	6	19	316.7
Male n=392	61	138	226.2
Female n=136	22	54	245.5

AD – Aviation Machinist's Mate AO – Aviation Ordnanceman			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	199	173	86.9
White n=185	78	61	78.2
Black n=184	41	71	173.2
Asian n= 34	19	12	63.2
Male n=392	154	124	80.5
Female n=136	41	45	109.8

AE – Aviation Electrician's Mate AV – Avionics Technician AT - Aviation Electronics Technician-			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	23	65	282.6
White n=185	6	34	566.7
Black n=184	5	11	220.0
Asian n= 34	2	11	550.0
Male n=392	19	52	273.7
Female n=136	3	13	433.3

AECF – Advanced Electronics Computer Field CTM – Cryptologic Technician Maintenance ET – Electronics Technician FC – Fire Controlman STG – Sonar Technician Surface			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	7	33	471.4
White n=185	2	16	800.0
Black n=184	3	6	200.0
Asian n= 34	0	4	
Male n=392	4	25	625.0
Female n=136	3	8	266.7

AG – Aerographer's Mate CTT – Cryptologic Technician Technical CTI – Cryptologic Technician Interpretive EW – Electronics Warfare Technician (merged w/ CTT)			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	27	70	259.3
White n=185	8	35	437.5
Black n=184	6	12	200.0
Asian n= 34	1	9	900.0
Male n=392	19	54	284.2
Female n=136	7	14	200.0

AIRC – Aircrew Program			
AIRR – Aircrew Program			
AW – Aviation Warfare Systems Operator			
TM – Torpedoman's Mate			

	Initial qualification	Additional qualification	Percent Increase
All groups n=543	219	153	69.9
White n=185	79	59	74.7
Black n=184	60	48	80.0
Asian n= 34	22	9	40.9
Male n=392	151	115	76.2
Female n=136	63	35	55.6

| AZ – Aviation Maintenance Administrationman |
| CTO – Cryptologic Technician (Communications) |
| LI – Lithographer |
| PH – Photgrapher's Mate |
| SK – Storekeeper |

	Initial qualification	Additional qualification	Percent Increase
All groups n=543	56	196	350.0
White n=185	20	74	370.0
Black n=184	12	60	500.0
Asian n= 34	5	18	360.0
Male n=392	42	150	357.1
Female n=136	13	40	307.7

| AM, AME, AMH, AMS – Aviation Structural Mechanic |

	Initial qualification	Additional qualification	Percent Increase
All groups n=543	28	71	253.6
White n=185	12	36	300.0
Black n=184	3	12	400.0
Asian n= 34	0	10	
Male n=392	26	62	238.5
Female n=136	1	9	900.0

| AS – Aviation Support Equipment Technician | | |
| CE – Construction Electrician | | |
UT - Utilitiesman		

	Initial qualification	Additional qualification	Percent Increase
All groups n=543	98	151	154.1
White n=185	43	60	139.5
Black n=184	17	40	235.3
Asian n= 34	10	15	150.0
Male n=392	81	104	128.4
Female n=136	14	44	314.3

| BU – Builder | | |
| EO – Equipment Operator | | |
SW - Steelworker		

	Initial qualification	Additional qualification	Percent Increase
All groups n=543	186	175	180.8
White n=185	80	62	77.5
Black n=184	37	65	175.7
Asian n= 34	13	19	146.2
Male n=392	165	120	72.7
Female n=136	18	50	277.8

CM – Construction Mechanic		

	Initial qualification	Additional qualification	Percent Increase
All groups n=543	52	94	180.8
White n=185	24	42	168.0
Black n=184	7	18	257.1
Asian n= 34	2	12	600.0
Male n=392	48	81	168.8
Female n=136	2	13	650.0

CTA – Cryptologic Technician (Administration)			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	96	185	192.7
White n=185	32	68	212.5
Black n=184	26	65	250.0
Asian n= 34	8	15	187.5
Male n=392	62	135	217.7
Female n=136	31	45	145.2

DC – Damage Controlman HT – Hull Technician MR – Machinery Repairman			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	92	200	217.4
White n=185	40	79	197.5
Black n=184	16	60	375.0
Asian n= 34	7	16	228.6
Male n=392	75	145	193.3
Female n=136	15	49	326.7

DK – Disbursing Clerk			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	43	166	386.0
White n=185	14	64	457.1
Black n=184	10	49	490.0
Asian n= 34	2	17	850.0
Male n=392	30	130	433.3
Female n=136	12	31	258.3

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DT – Dental Technician			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	275	172	62.5
White n=185	100	55	55.0
Black n=184	83	62	74.7
Asian n= 34	17	14	82.4
Male n=392	183	129	70.5
Female n=136	83	40	48.2

EA – Engineering Aid			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	73	127	174.0
White n=185	22	56	254.5
Black n=184	18	29	161.1
Asian n= 34	8	17	212.5
Male n=392	47	96	204.3
Female n=136	23	29	126.1

EM – Electrician's Mate GSE –Gas Turbine Systems Technician (Electrical) IC – Interior Communicationman MMS – Machinist Mate (Submarine)			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	48	142	295.8
White n=185	17	59	347.1
Black n=184	11	32	290.9
Asian n= 34	5	15	300.0
Male n=392	35	114	325.7
Female n=136	12	24	200.0

| EN – Engineman | | | |
| GSM – Gas Turbine Systems Technician (Mechanical) | | | |
MM – Machinist Mate			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	138	221	160.1
White n=185	62	75	121.0
Black n=184	23	86	373.9
Asian n= 34	10	18	180.0
Male n=392	114	156	136.8
Female n=136	22	59	268.2

ETS – Electronics Technician (Submarine)			
FT – Fire Control Technician			
SECF – Submarine Electronics Computer Field			
STS – Sonar Technician (Submarine)			
MT – Missile Technician			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	334	142	42.5
White n=185	138	37	26.8
Black n=184	81	67	82.7
Asian n= 34	27	7	25.9
Male n=392	273	90	33.0
Female n=136	53	47	88.7

GM – Gunner's Mate			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	75	135	180.0
White n=185	30	58	193.3
Black n=184	15	31	206.7
Asian n= 34	6	15	250.0
Male n=392	60	99	165.0
Female n=136	13	33	253.8

HM – Hospital Corpsman			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	155	175	112.9
White n=185	60	64	106.7
Black n=184	39	62	159.0
Asian n= 34	11	16	145.5
Male n=392	112	127	113.4
Female n=136	39	46	117.9

IS – Intelligence Specialist PC – Postal Clerk			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	25	118	472.0
White n=185	7	48	687.7
Black n=184	6	31	516.7
Asian n= 34	2	11	550.0
Male n=392	17	92	541.2
Female n=136	8	22	275.0

IT –Information System Technician			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	31	75	241.9
White n=185	10	35	350.0
Black n=184	5	16	320.0
Asian n= 34	3	9	300.0
Male n=392	22	59	268.2
Female n=136	8	15	187.5

ITS – Information System Technician (Submarine)			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	21	66	314.3
White n=185	5	35	700.0
Black n=184	4	11	275.0
Asian n= 34	2	11	550.0
Male n=392	18	53	294.4
Female n=136	2	13	650.0

JO – Journalist CTR – Cryptologic Technician (Collection)			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	18	89	494.4
White n=185	3	37	1233.3
Black n=184	5	22	440.0
Asian n= 34	1	10	1000.0
Male n=392	13	66	507.7
Female n=136	5	20	400.0

LN – Legalman			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	140	223	159.3
White n=185	51	79	154.9
Black n=184	37	84	227.0
Asian n= 34	10	15	150.0
Male n=392	99	163	164.6
Female n=136	38	55	144.7

MA – Master at Arms			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	85	220	258.8
White n=185	33	80	242.4
Black n=184	23	74	321.7
Asian n= 34	4	18	450.0
Male n=392	64	163	254.7
Female n=136	20	52	260.0

MN – Mineman PR – Aircrew Survival Equipmentman			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	55	99	180.0
White n=185	28	43	153.6
Black n=184	6	27	450.0
Asian n= 34	2	11	550.0
Male n=392	52	86	165.4
Female n=136	2	13	650.0

CS – Culinary Specialist			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	444	82	18.5
White n=185	156	22	14.1
Black n=184	136	40	29.4
Asian n= 34	30	4	13.3
Male n=392	323	54	16.7
Female n=136	107	27	25.2

CSS – Culinary Specialist (Submarine) SS – Submarine Seafarer Program SKS – Storekeeper (Submarine) YNS – Yeoman (Submarine)		
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	140	186	132.9
White n=185	55	69	125.5
Black n=184	29	66	227.6
Asian n= 34	14	16	114.3
Male n=392	107	136	127.1
Female n=136	29	45	155.2

OS – Operations Specialist		
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	175	201	114.9
White n=185	61	71	116.4
Black n=184	48	70	145.8
Asian n= 34	13	17	130.8
Male n=392	105	148	141.0
Female n=136	62	50	80.6

PN – Personnelman RP – Religious Program Specialist YN – Yeoman		
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	171	219	128.1
White n=185	60	74	123.3
Black n=184	47	81	172.3
Asian n= 34	12	16	133.3
Male n=392	100	164	164.0
Female n=136	63	52	82.5

QM - Quartermaster			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	143	244	170.6
White n=185	57	85	149.1
Black n=184	40	86	215.0
Asian n= 34	7	19	271.4
Male n=392	105	174	165.7
Female n=136	36	64	177.8

SH - Ship's Serviceman			
	Initial qualification	Additional qualification	Percent Increase
All groups n=543	173	248	143.4
White n=185	70	85	121.4
Black n=184	48	88	183.3
Asian n= 34	8	19	237.5
Male n=392	127	180	141.7
Female n=136	44	61	138.6

APPENDIX D: INITIAL MODEL COEFFICIENT AND MISCLASSIFICATION TABLES

A.   AVIATION BOATSWAIN'S MATE (AB, ABE, ABF, ABH)

	Value	Std. Error	t value
(Intercept)	17.5348	44.8395	0.3911
RACEBLACK	-6.7887	25.7695	-0.2634
RACEINDIAN	0.6760	44.8100	0.0151
RACEUNK	-7.3663	25.7736	-0.2858
RACEWHITE	-6.3080	25.7721	-0.2448
CUR.ED31	-8.2891	36.6596	-0.2261
CUR.ED41	-8.8599	36.6943	-0.2415
CUR.ED44	-1.1452	44.1607	-0.0259
CUR.ED51	-1.0226	51.8478	-0.0197
CUR.ED99	-8.8275	36.6823	-0.2406
SEX	0.9914	0.5116	1.9377
Age.at.Test2	-0.1123	0.0859	-1.3078
years.between.tests	0.2030	0.1486	1.3664
AB.M	0.0436	0.0389	1.1203

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	16	36
1	5	115
Naïve Misclassification Rate	0.30	
Prediction Misclassification Rate	0.24	

B. **AIR TRAFFIC CONTROLLER (AC)**

	Value	Std. Error	t value
(Intercept)	7.8907	22.2789	0.3542
RACEBLACK	-1.1659	0.6133	-1.9009
RACEINDIAN	-0.9388	1.1040	-0.8503
RACEUNK	-1.1383	0.7585	-1.5007
RACEWHITE	-0.9961	0.6079	-1.6385
CUR.ED21	-0.9780	31.4594	-0.0311
CUR.ED25	-13.6840	31.4556	-0.4350
CUR.ED26	-8.0831	22.2746	-0.3629
CUR.ED31	-7.3949	22.2424	-0.3325
CUR.ED41	-8.1743	22.2593	-0.3672
CUR.ED44	-0.1335	25.6341	-0.0052
CUR.ED45	-14.1040	31.4593	-0.4483
CUR.ED51	0.6071	27.1751	0.0223
CUR.ED99	-6.9256	22.2626	-0.3111
SEX	-0.8389	0.3673	-2.2838
Age.at.Test2	0.0291	0.0557	0.5231
years.between.tests	0.1312	0.0831	1.5789
AC.M	0.0183	0.0175	1.0464

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	107	16
1	53	28
Naïve Misclassification Rate	0.40	
Prediction Misclassification Rate	0.34	

C. AVIATION MACHINIST'S MATE (AD), AVIATION ORDNANCEMAN (AO)

	Value	Std. Error	t value
(Intercept)	9.9107	22.3022	0.4444
RACEBLACK	-1.7579	1.0417	-1.6876
RACEINDIAN	-1.4202	1.6308	-0.8709
RACEUNK	-2.8048	1.1843	-2.3683
RACEWHITE	-1.7193	1.0505	-1.6368
CUR.ED26	-8.4835	22.2739	-0.3809
CUR.ED31	-6.5983	22.2429	-0.2966
CUR.ED41	-6.5359	22.2591	-0.2936
CUR.ED44	-0.1370	31.4617	-0.0044
CUR.ED45	-13.5365	31.4591	-0.4303
CUR.ED51	-6.8520	22.2870	-0.3074
CUR.ED99	-7.4568	22.2735	-0.3348
SEX	-0.0261	0.3960	-0.0658
Age.at.Test2	-0.0584	0.0689	-0.8476
years.between.tests	0.1970	0.1040	1.8940
AD.M	0.0688	0.0265	2.5950

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	51	30
1	30	50
Naïve Misclassification Rate	0.50	
Prediction Misclassification Rate	0.37	

D. AVIATION ELECTRICIAN'S MATE (AE), AVIONICS TECHNICIAN (AV), AVIATION ELECTRONICS TECHNICIAN (AT)

	Value	Std. Error	t value
(Intercept)	-3.3177	99.6746	-0.0333
RACEBLACK	-0.6770	0.9820	-0.6894
RACEINDIAN	-7.8999	43.2237	-0.1828
RACEUNK	-1.3759	1.9611	-0.7016
RACEWHITE	0.1609	0.8980	0.1792
CUR.ED21	18.3755	113.1629	0.1624
CUR.ED25	-0.0036	140.9030	0.0000
CUR.ED26	0.8189	110.3712	0.0074
CUR.ED31	7.8030	99.6340	0.0783
CUR.ED41	0.4134	104.5158	0.0040
CUR.ED44	11.0958	99.6415	0.1114
CUR.ED45	1.2965	140.9134	0.0092
CUR.ED51	1.2755	121.9926	0.0105
CUR.ED99	0.7532	107.5314	0.0070
SEX	0.0693	0.7550	0.0918
Age.at.Test2	-0.1753	0.1317	-1.3312
years.between.tests	0.3916	0.1665	2.3512
AE.M	0.1417	0.0308	4.5964

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	195	3
1	12	12
Naïve Misclassification Rate	0.11	
Prediction Misclassification Rate	0.07	

E. ADVANCED ELECTRONICS COMPUTER FIELD (AECF), CRYPTOLOGIC TECHNICIAN MAINTENANCE (CTM), ELECTRONICS TECHNICIAN (ET), FIRE CONTROLMAN (FC), SONAR TECHNICIAN SURFACE (STG)

	Value	Std. Error	t value
(Intercept)	-7.0271	99.6351	-0.0705
RACEBLACK	-1.5197	0.8995	-1.6895
RACEINDIAN	-8.4124	41.6417	-0.2020
RACEUNK	-1.0735	1.2867	-0.8343
RACEWHITE	-0.7950	0.7922	-1.0035
CUR.ED21	-0.3425	108.6173	-0.0032
CUR.ED25	1.8414	140.9025	0.0131
CUR.ED26	10.6422	99.6408	0.1068
CUR.ED31	7.9965	99.6330	0.0803
CUR.ED41	0.2711	103.7872	0.0026
CUR.ED44	9.1015	99.6382	0.0913
CUR.ED45	1.8367	140.9062	0.0130
CUR.ED51	2.4342	122.0161	0.0199
CUR.ED64	19.7374	140.9006	0.1401
CUR.ED99	1.7689	106.6942	0.0166
SEX	-1.8724	0.6710	-2.7902
years.between.tests	0.1680	0.0736	2.2828
AECF.M	0.0889	0.0259	3.4351

OBSERVED VALUES		PREDICTION VALUES	
		FALSE	TRUE
	0	274	1
	1	15	2
Naïve Misclassification Rate		0.06	
Prediction Misclassification Rate		0.05	

F.   AEROGRAPHER'S MATE (AG), CRYPTOLOGIC TECHNICIAN TECHNICAL (CTT), CRYPTOLOGIC TECHNICIAN INTERPRETIVE (CTI)

	Value	Std. Error	t value
(Intercept)	10.3275	60.4570	0.1708
RACEBLACK	-1.1393	0.8484	-1.3428
RACEINDIAN	-0.1379	1.3957	-0.0988
RACEUNK	-0.3730	1.0165	-0.3670
RACEWHITE	-0.7821	0.7715	-1.0138
CUR.ED21	-1.1319	73.0770	-0.0155
CUR.ED25	-18.8242	85.4667	-0.2203
CUR.ED26	-18.0167	66.9684	-0.2690
CUR.ED31	-11.2245	60.4348	-0.1857
CUR.ED41	-17.6448	63.6701	-0.2771
CUR.ED44	-9.9588	60.4473	-0.1648
CUR.ED45	-18.4705	85.4699	-0.2161
CUR.ED51	-8.4850	60.4549	-0.1404
CUR.ED99	-17.3936	65.4761	-0.2656
SEX	-0.1115	0.6280	-0.1775
Age.at.Test2	0.0453	0.0810	0.5592
years.between.tests	0.2117	0.1142	1.8535
AG.M	0.1144	0.0332	3.4464

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	190	3
1	17	11
Naïve Misclassification Rate	0.13	
Prediction Misclassification Rate	0.09	

G.   (AIRC/AIRR) AIRCREW PROGRAM, AVIATION WARFARE SYSTEMS OPERATOR (AW), TORPEDOMAN'S MATE (TM)

	Value	Std. Error	t value
(Intercept)	8.8871	22.2944	0.3986
RACEBLACK	-1.2097	0.8136	-1.4869
RACEINDIAN	-1.6462	1.4720	-1.1184
RACEUNK	-0.3055	1.0192	-0.2997
RACEWHITE	-0.9738	0.8206	-1.1867
CUR.ED26	-8.5087	22.2746	-0.3820
CUR.ED31	-7.5323	22.2425	-0.3386
CUR.ED41	-6.4924	22.2594	-0.2917
CUR.ED44	-7.7136	22.2936	-0.3460
CUR.ED45	-15.3094	31.4605	-0.4866
CUR.ED51	-0.0137	31.4518	-0.0004
CUR.ED99	-7.2414	22.2664	-0.3252
SEX	-0.9636	0.4506	-2.1384
Age.at.Test2	0.0109	0.0666	0.1637
years.between.tests	0.0643	0.0921	0.6982
AIRC.M	0.0134	0.0200	0.6702

OBSERVED VALUES		PREDICTION VALUES	
		FALSE	TRUE
	0	51	23
	1	30	39
Naïve Misclassification Rate	0.48		
Prediction Misclassification Rate	0.37		

H. AVIATION STRUCTURAL MECHANIC (AM), AVIATION STRUCTURAL MECHANIC EQUIPMENT (AME)

	Value	Std. Error	t value
(Intercept)	-4.9582	99.6660	-0.0497
RACEBLACK	-0.9245	1.0103	-0.9151
RACEINDIAN	-7.9232	42.7571	-0.1853
RACEUNK	-6.5450	21.7016	-0.3016
RACEWHITE	0.0297	0.8743	0.0339
CUR.ED21	-4.5021	118.3666	-0.0380
CUR.ED25	-1.7992	140.9037	-0.0128
CUR.ED26	-2.3419	110.8763	-0.0211
CUR.ED31	5.1778	99.6364	0.0520
CUR.ED41	-1.9564	105.2478	-0.0186
CUR.ED44	-0.9520	112.5185	-0.0085
CUR.ED45	3.3126	142.5642	0.0232
CUR.ED51	-1.1863	120.3385	-0.0099
CUR.ED99	-1.2521	107.2909	-0.0117
SEX	-0.2115	0.8897	-0.2378
Age.at.Test2	-0.0373	0.1067	-0.3492
years.between.tests	0.2301	0.1463	1.5730
AM.M	0.0863	0.0282	3.0574

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	205	1
1	12	2
Naïve Misclassification Rate	0.06	
Prediction Misclassification Rate	0.06	

I. AVIATION SUPPORT EQUIPMENT TECHNICIAN (AS), CONSTRUCTION ELECTRICIAN (CE), UTILITIESMAN (UT)

	Value	Std. Error	t value
(Intercept)	-6.8079	22.2976	-0.3053
RACEBLACK	-0.8884	0.7128	-1.2463
RACEINDIAN	0.1018	1.1589	0.0878
RACEUNK	-1.1972	0.9341	-1.2817
RACEWHITE	-0.4120	0.7061	-0.5834
CUR.ED21	13.6792	31.4519	0.4349
CUR.ED25	14.8944	31.4569	0.4735
CUR.ED26	6.8919	22.2768	0.3094
CUR.ED31	7.2794	22.2446	0.3272
CUR.ED41	5.5652	22.2739	0.2499
CUR.ED44	7.8338	22.2941	0.3514
CUR.ED45	1.0979	31.4629	0.0349
CUR.ED51	8.1006	22.2904	0.3634
CUR.ED99	6.7190	22.2813	0.3016
SEX	-0.2591	0.4018	-0.6448
Age.at.Test2	0.0353	0.0719	0.4908
years.between.tests	0.0918	0.0948	0.9687
AS.M	0.0927	0.0242	3.8264

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	127	11
1	43	19
Naïve Misclassification Rate	0.31	
Prediction Misclassification Rate	0.27	

J. AVIATION MAINTENANCE ADMINISTRATION (AZ), CRYPTOLOGIC TECHNICIAN COMMUNICATIONS (CTO), LITHOGRAPHER (LI), PHOTOGRAPHER'S MATE (PH), STOREKEEPER (SK)

	Value	Std. Error	t value
(Intercept)	-5.9939	22.2867	-0.2689
RACEBLACK	-0.7943	0.6088	-1.3046
RACEINDIAN	0.5034	1.0936	0.4603
RACEUNK	-1.2941	0.8108	-1.5962
RACEWHITE	-0.4944	0.6075	-0.8137
CUR.ED21	11.6710	31.4610	0.3710
CUR.ED25	-0.9796	31.4584	-0.0311
CUR.ED26	5.0835	22.2753	0.2282
CUR.ED31	5.8201	22.2446	0.2616
CUR.ED41	4.3352	22.2704	0.1947
CUR.ED44	13.1099	27.0808	0.4841
CUR.ED45	-0.5130	31.4617	-0.0163
CUR.ED51	6.2298	22.2932	0.2794
CUR.ED99	5.1967	22.2739	0.2333
SEX	0.2902	0.3860	0.7518
Age.at.Test2	-0.0017	0.0577	-0.0296
years.between.tests	0.1997	0.0863	2.3144
AZ.M	0.0524	0.0376	1.3960

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	123	11
1	48	30
Naïve Misclassification Rate	0.37	
Prediction Misclassification Rate	0.28	

K. BUILDER (BU), EQUIPMENT OPERATOR (EO), STEELWORKER (SW)

	Value	Std. Error	t value
(Intercept)	-5.1935	22.3000	-0.2329
RACEBLACK	-1.7517	0.8666	-2.0214
RACEINDIAN	5.6413	15.4687	0.3647
RACEUNK	-2.3729	1.0483	-2.2636
RACEWHITE	-1.3641	0.8674	-1.5727
CUR.ED21	13.7414	31.4550	0.4369
CUR.ED25	-1.5558	31.4570	-0.0495
CUR.ED26	4.9178	22.2811	0.2207
CUR.ED31	6.0278	22.2436	0.2710
CUR.ED41	4.7551	22.2616	0.2136
CUR.ED44	13.6988	27.1145	0.5052
CUR.ED51	5.9111	22.2903	0.2652
CUR.ED99	4.7394	22.2757	0.2128
SEX	0.7686	0.4070	1.8883
Age.at.Test2	0.0221	0.0721	0.3063
years.between.tests	0.0029	0.1054	0.0276
BU.M	0.0316	0.0236	1.3379

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	60	27
1	30	49
Naïve Misclassification Rate	0.48	
Prediction Misclassification Rate	0.34	

L.   CONSTRUCTION MECHANIC (CM)

	Value	Std. Error	t value
(Intercept)	-7.6439	99.6579	-0.0767
RACEBLACK	-0.0878	0.9221	-0.0953
RACEINDIAN	1.9534	1.2822	1.5234
RACEUNK	-7.1006	21.5964	-0.3288
RACEWHITE	0.5651	0.8545	0.6613
CUR.ED21	7.0215	99.6518	0.0705
CUR.ED25	-2.1444	140.9019	-0.0152
CUR.ED26	-2.4906	111.0508	-0.0224
CUR.ED31	5.9135	99.6341	0.0594
CUR.ED41	-2.1029	105.3465	-0.0200
CUR.ED44	-0.9535	112.3550	-0.0085
CUR.ED45	4.4066	142.5462	0.0309
CUR.ED51	-1.7835	120.6662	-0.0148
CUR.ED99	-1.6503	107.8330	-0.0153
SEX	0.6183	0.7349	0.8414
Age.at.Test2	0.0089	0.0967	0.0918
years.between.tests	0.1110	0.1281	0.8662
CM.M	0.0711	0.0255	2.7918

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	189	2
1	20	3
Naïve Misclassification Rate	0.11	
Prediction Misclassification Rate	0.10	

M. CRYPTOLOGIC TECHNICIAN ADMINISTRATIVE (CTA)

	Value	Std. Error	t value
(Intercept)	6.9644	22.2781	0.3126
RACEBLACK	-0.3898	0.6209	-0.6277
RACEINDIAN	-0.1696	1.3800	-0.1229
RACEUNK	-0.0444	0.7634	-0.0581
RACEWHITE	-0.2928	0.6274	-0.4668
CUR.ED21	0.1724	26.7608	0.0064
CUR.ED25	-13.1121	31.4566	-0.4168
CUR.ED26	-7.0762	22.2767	-0.3177
CUR.ED31	-6.3722	22.2440	-0.2865
CUR.ED41	-7.4453	22.2586	-0.3345
CUR.ED44	-0.0172	25.6565	-0.0007
CUR.ED45	-13.7512	31.4601	-0.4371
CUR.ED51	0.3654	31.4539	0.0116
CUR.ED99	-6.2164	22.2652	-0.2792
SEX	-0.6208	0.3802	-1.6329
Age.at.Test2	0.0113	0.0578	0.1951
years.between.tests	0.1971	0.0900	2.1911
CTA.M	0.0932	0.0372	2.5054

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	80	25
1	41	52
Naïve Misclassification Rate	0.47	
Prediction Misclassification Rate	0.33	

N.   DAMAGE CONTROLMAN (DC), HULL MAINTENANCE TECHNICIAN (HT), MACHINERY REPAIRMAN (MR)

	Value	Std. Error	t value
(Intercept)	9.6941	36.6819	0.2643
RACEBLACK	-0.8652	0.6400	-1.3519
RACEINDIAN	1.0187	1.2936	0.7875
RACEUNK	-0.7513	0.7876	-0.9540
RACEWHITE	-0.1449	0.6278	-0.2308
CUR.ED21	-0.6511	51.8419	-0.0126
CUR.ED25	-16.7274	51.8435	-0.3227
CUR.ED26	-9.4627	36.6780	-0.2580
CUR.ED31	-8.7980	36.6586	-0.2400
CUR.ED41	-16.6720	38.7727	-0.4300
CUR.ED44	-7.7809	36.6790	-0.2121
CUR.ED45	-16.5349	51.8451	-0.3189
CUR.ED51	-0.3901	51.8431	-0.0075
CUR.ED99	-9.6604	36.6772	-0.2634
SEX	-0.1903	0.3615	-0.5265
Age.at.Test2	-0.0228	0.0596	-0.3830
years.between.tests	0.1322	0.0843	1.5690
DC.M	0.0308	0.0215	1.4329

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	98	24
1	48	34
Naïve Misclassification Rate	0.40	
Prediction Misclassification Rate	0.35	

O. DISBURSING CLERK (DK)

	Value	Std. Error	t value
(Intercept)	-6.3395	22.2877	-0.2844
RACEBLACK	-0.7759	0.5736	-1.3527
RACEINDIAN	0.8034	1.0674	0.7527
RACEUNK	-1.6123	0.8606	-1.8734
RACEWHITE	-0.7588	0.5781	-1.3125
CUR.ED21	12.1043	31.4612	0.3847
CUR.ED25	-0.4852	31.4588	-0.0154
CUR.ED26	5.3362	22.2755	0.2396
CUR.ED31	5.6347	22.2449	0.2533
CUR.ED41	4.5141	22.2703	0.2027
CUR.ED44	6.9578	22.2830	0.3122
CUR.ED45	0.0299	31.4635	0.0009
CUR.ED51	6.5105	22.2939	0.2920
CUR.ED99	5.5800	22.2738	0.2505
SEX	0.0654	0.4033	0.1620
Age.at.Test2	0.0235	0.0597	0.3942
years.between.tests	0.1777	0.0848	2.0959
DK.M	0.0559	0.0364	1.5358

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	142	11
1	41	23
Naïve Misclassification Rate	0.29	
Prediction Misclassification Rate	0.24	

P.   DENTAL TECHNICIAN (DT)

	Value	Std. Error	t value
(Intercept)	2.2621	2.2758	0.9940
RACEBLACK	-1.5919	0.9544	-1.6679
RACEINDIAN	6.8872	20.5981	0.3344
RACEUNK	-0.7256	1.1617	-0.6246
RACEWHITE	-1.3081	0.9572	-1.3666
CUR.ED31	0.3509	1.0940	0.3207
CUR.ED41	1.0793	1.4105	0.7652
CUR.ED44	6.1225	36.6822	0.1669
CUR.ED99	8.6858	16.0561	0.5410
SEX	-1.5908	0.6449	-2.4667
Age.at.Test2	-0.0196	0.0851	-0.2302
years.between.tests	0.3772	0.1506	2.5054
DT.M	0.0235	0.0391	0.6020

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	26	18
1	15	60
Naïve Misclassification Rate	0.37	
Prediction Misclassification Rate	0.28	

Q.   ENGINEERING AIDE (EA)

	Value	Std. Error	t value
(Intercept)	9.0262	20.7532	0.4349
RACEBLACK	-1.7853	0.6836	-2.6115
RACEINDIAN	-1.6557	1.2891	-1.2844
RACEUNK	-1.5446	0.8492	-1.8188
RACEWHITE	-1.1203	0.6597	-1.6983
CUR.ED25	-15.8894	42.0971	-0.3774
CUR.ED26	-15.9929	27.1687	-0.5887
CUR.ED31	-8.7569	20.6962	-0.4231
CUR.ED41	-15.4707	24.8715	-0.6220
CUR.ED44	-7.5483	20.7481	-0.3638
CUR.ED45	-15.8294	42.1008	-0.3760
CUR.ED51	-7.6494	20.7438	-0.3688
CUR.ED99	-8.9391	20.7286	-0.4312
SEX	-0.0743	0.4249	-0.1747
Age.at.Test2	0.0069	0.0662	0.1044
years.between.tests	0.1077	0.0908	1.1854
EA.M	0.0234	0.0157	1.4877

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	148	6
1	40	13
Naïve Misclassification Rate	0.26	
Prediction Misclassification Rate	0.22	

R. ELECTRICIAN'S MATE (EM), GAS TURBINE SYSTEM TECHNICIAN ELECTRICAL (GSE), INTERIOR COMMUNICATIONS ELECTRICIAN (IC), MACHINIST'S MATE SUBMARINE (MMS)

	Value	Std. Error	t value
(Intercept)	10.5843	60.4494	0.1751
RACEBLACK	-1.3958	0.6863	-2.0337
RACEINDIAN	-8.5315	26.0727	-0.3272
RACEUNK	-0.4115	0.8343	-0.4933
RACEWHITE	-0.5884	0.6375	-0.9229
CUR.ED21	-2.1294	72.6465	-0.0293
CUR.ED25	-19.5582	85.4653	-0.2288
CUR.ED26	-19.8540	67.0573	-0.2961
CUR.ED31	-11.8505	60.4337	-0.1961
CUR.ED41	-19.7445	63.7606	-0.3097
CUR.ED44	-1.5088	69.2843	-0.0218
CUR.ED45	-20.5349	85.4676	-0.2403
CUR.ED51	-1.1415	73.8647	-0.0155
CUR.ED99	-19.5885	65.6766	-0.2983
SEX	0.1876	0.4952	0.3790
Age.at.Test2	0.0569	0.0622	0.9139
years.between.tests	0.1111	0.0905	1.2284
EM.M	0.0525	0.0219	2.4008

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	161	7
1	33	14
Naïve Misclassification Rate	0.22	
Prediction Misclassification Rate	0.19	

S.   ENGINEMAN (EN), GAS TURBINE SYSTEM TECHNICIAN MECHANICAL (GSM), MACHINIST'S MATE (MM)

	Value	Std. Error	t value
(Intercept)	8.6746	36.6822	0.2365
RACEBLACK	-0.4454	0.6772	-0.6577
RACEINDIAN	7.9048	18.3001	0.4320
RACEUNK	-1.0992	0.8257	-1.3313
RACEWHITE	-0.1551	0.6789	-0.2284
CUR.ED25	-16.7942	51.8434	-0.3239
CUR.ED26	-9.7773	36.6780	-0.2666
CUR.ED31	-8.3011	36.6586	-0.2264
CUR.ED41	-9.5956	36.6675	-0.2617
CUR.ED44	-0.6455	44.2593	-0.0146
CUR.ED45	-16.2827	51.8450	-0.3141
CUR.ED51	-0.2013	51.8431	-0.0039
CUR.ED99	-9.8265	36.6768	-0.2679
SEX	0.2190	0.3578	0.6120
Age.at.Test2	-0.0279	0.0598	-0.4676
years.between.tests	0.1954	0.0985	1.9836
EN.M	-0.0038	0.0238	-0.1608

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	53	39
1	33	66
Naïve Misclassification Rate	0.48	
Prediction Misclassification Rate	0.38	

T. ELECTRONICS TECHNICIAN SUBMARINE (ETS), FIRE CONTROL TECHNICIAN (FT), SUBMARINE ELECTRONICS COMPUTER FIELD (SECF), SONAR TECHNICIAN SUBMARINE (STS), MISSILE TECHNICIAN (MT)

	Value	Std. Error	t value
(Intercept)	-2.1858	60.4810	-0.0361
RACEBLACK	-0.7851	0.8351	-0.9402
RACEINDIAN	-7.6155	25.4592	-0.2991
RACEUNK	-1.1953	1.3719	-0.8713
RACEWHITE	-0.2438	0.7543	-0.3232
CUR.ED21	6.4498	60.4513	0.1067
CUR.ED25	-1.6713	85.4670	-0.0196
CUR.ED26	-1.1564	67.2207	-0.0172
CUR.ED31	5.7651	60.4353	0.0954
CUR.ED41	-1.1536	63.6049	-0.0181
CUR.ED44	7.0320	60.4475	0.1163
CUR.ED45	-0.9997	85.4743	-0.0117
CUR.ED51	-0.9206	73.9965	-0.0124
CUR.ED99	-0.4313	65.9157	-0.0065
SEX	0.4237	0.6649	0.6372
Age.at.Test2	-0.1077	0.0998	-1.0796
years.between.tests	0.2658	0.1279	2.0782
ETS.M	0.1090	0.0276	3.9541

OBSERVED VALUES		PREDICTION VALUES	
		FALSE	TRUE
	0	193	2
	1	19	7
Naïve Misclassification Rate		0.12	
Prediction Misclassification Rate		0.10	

U.   GUNNER'S MATE (GM)

	Value	Std. Error	t value
(Intercept)	-6.9267	36.6887	-0.1888
RACEBLACK	-1.1471	0.6879	-1.6675
RACEINDIAN	-0.1365	1.1073	-0.1232
RACEUNK	-1.3601	0.9725	-1.3986
RACEWHITE	-0.6768	0.6562	-1.0313
CUR.ED21	15.8770	51.8410	0.3063
CUR.ED25	16.7139	51.8446	0.3224
CUR.ED26	0.3782	40.8908	0.0092
CUR.ED31	7.2861	36.6604	0.1987
CUR.ED41	0.1136	38.6169	0.0029
CUR.ED44	8.3315	36.6868	0.2271
CUR.ED45	0.6966	51.8496	0.0134
CUR.ED51	8.8612	36.6883	0.2415
CUR.ED99	7.4771	36.6803	0.2038
SEX	-0.3334	0.4443	-0.7504
Age.at.Test2	-0.0015	0.0695	-0.0209
years.between.tests	0.1469	0.0954	1.5391
GM.M	0.0514	0.0220	2.3326

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	158	4
1	36	10
Naïve Misclassification Rate	0.22	
Prediction Misclassification Rate	0.19	

V.   HOSPITAL CORPSMAN (HM)

	Value	Std. Error	t value
(Intercept)	-1.0477	1.8490	-0.5666
RACEBLACK	-0.7806	0.6680	-1.1687
RACEINDIAN	0.0912	1.3833	0.0659
RACEUNK	-0.6473	0.8167	-0.7927
RACEWHITE	-0.6244	0.6738	-0.9266
CUR.ED31	1.2603	1.1956	1.0541
CUR.ED41	1.0353	1.4307	0.7236
CUR.ED44	1.4558	1.7244	0.8442
CUR.ED45	-5.1610	13.5613	-0.3806
CUR.ED51	-4.6973	13.5525	-0.3466
CUR.ED99	1.9974	1.5190	1.3149
SEX	-0.3902	0.3815	-1.0229
Age.at.Test2	0.0323	0.0623	0.5186
years.between.tests	0.1225	0.0908	1.3490
HM.M	0.0411	0.0259	1.5892

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	56	32
1	40	45
Naïve Misclassification Rate	0.49	
Prediction Misclassification Rate	0.41	

W.   INTELLIGENCE SPECIALIST (IS), POSTAL CLERK (PC)

	Value	Std. Error	t value
(Intercept)	-7.0261	60.4554	-0.1162
RACEBLACK	-0.7790	0.6812	-1.1437
RACEINDIAN	0.9681	1.1364	0.8519
RACEUNK	-1.6165	1.1463	-1.4102
RACEWHITE	-0.6462	0.6725	-0.9609
CUR.ED21	5.2581	60.4538	0.0870
CUR.ED25	-1.8866	85.4667	-0.0221
CUR.ED26	-1.8440	67.3990	-0.0274
CUR.ED31	5.5749	60.4352	0.0922
CUR.ED41	-1.9299	63.9242	-0.0302
CUR.ED44	7.4917	60.4475	0.1239
CUR.ED45	-0.9844	85.4705	-0.0115
CUR.ED51	-2.2987	73.9009	-0.0311
CUR.ED99	6.6461	60.4458	0.1100
SEX	0.3716	0.5407	0.6872
Age.at.Test2	0.0730	0.0692	1.0546
years.between.tests	0.1618	0.0937	1.7273
IS.M	0.1518	0.0421	3.6017

OBSERVED VALUES		PREDICTION VALUES	
		FALSE	TRUE
	0	173	9
	1	23	17
Naïve Misclassification Rate		0.18	
Prediction Misclassification Rate		0.14	

X.   INFORMATION SYSTEMS TECHNICIAN (IT)

	Value	Std. Error	t value
(Intercept)	-4.4085	60.4740	-0.0729
RACEBLACK	0.4085	0.9646	0.4235
RACEINDIAN	-6.9570	25.8996	-0.2686
RACEUNK	-0.2329	1.3992	-0.1665
RACEWHITE	0.4744	0.8962	0.5293
CUR.ED21	8.5368	60.4475	0.1412
CUR.ED25	0.5051	85.4670	0.0059
CUR.ED26	1.4301	66.8650	0.0214
CUR.ED31	7.8893	60.4347	0.1305
CUR.ED41	0.7279	63.3449	0.0115
CUR.ED44	9.1050	60.4469	0.1506
CUR.ED45	0.9739	85.4734	0.0114
CUR.ED51	1.1135	73.7563	0.0151
CUR.ED99	1.0752	65.3753	0.0164
SEX	0.3074	0.6291	0.4887
Age.at.Test2	-0.1082	0.0989	-1.0935
years.between.tests	0.3067	0.1267	2.4202
IT.M	0.1306	0.0307	4.2560

OBSERVED VALUES		PREDICTION VALUES	
		FALSE	TRUE
	0	188	3
	1	16	12
Naïve Misclassification Rate		0.13	
Prediction Misclassification Rate		0.09	

Y. INFORMATION SYSTEMS TECHNICIAN SUBMARINE (ITS)

	Value	Std. Error	t value
(Intercept)	-2.7405	99.6758	-0.0275
RACEBLACK	-0.6653	0.9860	-0.6747
RACEINDIAN	-7.8762	43.2016	-0.1823
RACEUNK	-1.3676	1.9746	-0.6926
RACEWHITE	0.1919	0.8977	0.2138
CUR.ED21	17.9196	113.1149	0.1584
CUR.ED25	-0.4610	140.9029	-0.0033
CUR.ED26	0.3837	110.3468	0.0035
CUR.ED31	7.3576	99.6341	0.0738
CUR.ED41	-0.0206	104.4994	-0.0002
CUR.ED44	10.6655	99.6414	0.1070
CUR.ED45	0.8666	140.9134	0.0061
CUR.ED51	0.8498	121.9964	0.0070
CUR.ED99	0.3080	107.5087	0.0029
SEX	0.0862	0.7565	0.1139
Age.at.Test2	-0.1804	0.1325	-1.3622
years.between.tests	0.3975	0.1673	2.3755
ITS.M	0.1442	0.0304	4.7493

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	195	3
1	12	13
Naïve Misclassification Rate	0.11	
Prediction Misclassification Rate	0.07	

Z.   JOURNALIST (JO)

	Value	Std. Error	t value
(Intercept)	-3.2529	60.4656	-0.0538
RACEBLACK	-1.0500	0.7455	-1.4084
RACEINDIAN	0.2138	1.3230	0.1616
RACEUNK	-1.0242	1.2468	-0.8215
RACEWHITE	-0.6028	0.7148	-0.8432
CUR.ED21	-5.0033	73.9925	-0.0676
CUR.ED25	-2.8255	85.4680	-0.0331
CUR.ED26	-2.1966	67.4505	-0.0326
CUR.ED31	4.4949	60.4370	0.0744
CUR.ED41	-2.4295	63.8395	-0.0381
CUR.ED44	6.7704	60.4494	0.1120
CUR.ED45	-2.2107	85.4729	-0.0259
CUR.ED51	-2.8838	73.9946	-0.0390
CUR.ED99	-1.7129	65.7967	-0.0260
SEX	0.2720	0.6054	0.4493
Age.at.Test2	-0.0157	0.0814	-0.1929
years.between.tests	0.2551	0.1131	2.2550
JO.M	0.2110	0.0465	4.5347

OBSERVED VALUES		PREDICTION VALUES	
		FALSE	TRUE
	0	187	6
	1	18	13
Naïve Misclassification Rate		0.14	
Prediction Misclassification Rate		0.11	

AA. LEGALMAN (LN)

	Value	Std. Error	t value
(Intercept)	6.5415	22.2886	0.2935
RACEBLACK	-0.2211	0.6659	-0.3320
RACEINDIAN	0.5411	1.4091	0.3840
RACEUNK	-0.2946	0.7976	-0.3693
RACEWHITE	0.0516	0.6726	0.0767
CUR.ED21	-1.1966	31.4609	-0.0380
CUR.ED25	-14.1065	31.4564	-0.4484
CUR.ED26	-8.0251	22.2756	-0.3603
CUR.ED31	-6.4772	22.2442	-0.2912
CUR.ED41	-7.2946	22.2559	-0.3278
CUR.ED44	-0.3722	27.2243	-0.0137
CUR.ED45	-13.9989	31.4603	-0.4450
CUR.ED51	0.0125	31.4542	0.0004
CUR.ED99	-7.1510	22.2648	-0.3212
SEX	-0.2935	0.3919	-0.7488
Age.at.Test2	0.0351	0.0646	0.5435
years.between.tests	0.1282	0.0986	1.3001
LN.M	0.0449	0.0425	1.0576

OBSERVED VALUES		PREDICTION VALUES	
		FALSE	TRUE
	0	22	52
	1	15	90
Naïve Misclassification Rate	0.41		
Prediction Misclassification Rate	0.37		

AB. MASTER AT ARMS (MA)

	Value	Std. Error	t value
(Intercept)	7.2325	22.2805	0.3246
RACEBLACK	-0.7108	0.5942	-1.1964
RACEINDIAN	1.3924	1.2948	1.0754
RACEUNK	-0.7551	0.7515	-1.0048
RACEWHITE	-0.1176	0.5928	-0.1984
CUR.ED21	-1.9576	31.4593	-0.0622
CUR.ED25	-15.2923	31.4561	-0.4861
CUR.ED26	-8.9776	22.2741	-0.4031
CUR.ED31	-7.8096	22.2429	-0.3511
CUR.ED41	-9.5055	22.2688	-0.4269
CUR.ED44	-0.5650	27.1161	-0.0208
CUR.ED45	-14.5850	31.4596	-0.4636
CUR.ED51	-7.8918	22.2888	-0.3541
CUR.ED99	-8.9887	22.2738	-0.4036
SEX	0.2831	0.3780	0.7489
Age.at.Test2	0.0270	0.0604	0.4467
years.between.tests	0.1193	0.0865	1.3789
MA.M	0.0439	0.0373	1.1754

OBSERVED VALUES		PREDICTION VALUES	
		FALSE	TRUE
	0	85	23
	1	50	40
Naïve Misclassification Rate	0.45		
Prediction Misclassification Rate	0.37		

AC.   MINEMAN (MN), AIRCREW SURVIVAL EQUIPMENTMAN (PR)

	Value	Std. Error	t value
(Intercept)	-6.8784	99.6527	-0.0690
RACEBLACK	-0.9441	0.7642	-1.2354
RACEINDIAN	1.5146	1.1725	1.2917
RACEUNK	-8.1655	21.6243	-0.3776
RACEWHITE	-0.0123	0.7082	-0.0174
CUR.ED21	17.5111	117.8552	0.1486
CUR.ED25	-3.2698	140.9031	-0.0232
CUR.ED26	5.8569	99.6435	0.0588
CUR.ED31	5.4636	99.6354	0.0548
CUR.ED41	-2.5864	104.9863	-0.0246
CUR.ED44	-2.2673	111.6219	-0.0203
CUR.ED45	4.3137	142.5514	0.0303
CUR.ED51	-2.1310	121.9590	-0.0175
CUR.ED99	6.7415	99.6418	0.0677
SEX	1.2538	0.8417	1.4896
Age.at.Test2	-0.0373	0.0848	-0.4394
years.between.tests	0.2309	0.1167	1.9787
MN.M	0.0538	0.0239	2.2537

OBSERVED VALUES		PREDICTION VALUES	
		FALSE	TRUE
	0	183	4
	1	23	5
Naïve Misclassification Rate		0.13	
Prediction Misclassification Rate		0.13	

AD. CULINARY SPECIALIST (CS)

	Value	Std. Error	t value
(Intercept)	12.8227	85.6654	0.1497
RACEBLACK	-6.5849	60.4490	-0.1089
RACEINDIAN	0.8092	85.4799	0.0095
RACEUNK	-7.2119	60.4509	-0.1193
RACEWHITE	-6.8254	60.4476	-0.1129
CUR.ED31	-6.9013	60.4453	-0.1142
CUR.ED44	-2.4321	85.5199	-0.0284
CUR.ED99	1.3964	73.9602	0.0189
SEX	-1.3562	1.2215	-1.1103
Age.at.Test2	0.1305	0.2444	0.5338
years.between.tests	0.3877	0.4467	0.8679
MS.M	0.2642	0.1912	1.3822

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	2	8
1	1	33
Naïve Misclassification Rate	0.23	
Prediction Misclassification Rate	0.20	

AE. CULINARY SPECIALIST SUBMARINE (CSS), STOREKEEPER SUBMARINE (SKS), YEOMAN SUBMARINE (YNS)

	Value	Std. Error	t value
(Intercept)	7.9972	22.2959	0.3587
RACEBLACK	-0.6174	0.7797	-0.7918
RACEINDIAN	0.7630	1.4200	0.5373
RACEUNK	-1.2760	0.9202	-1.3867
RACEWHITE	-0.7172	0.7858	-0.9126
CUR.ED25	-0.1786	31.4558	-0.0057
CUR.ED26	-8.7670	22.2739	-0.3936
CUR.ED31	-7.4770	22.2426	-0.3362
CUR.ED41	-8.2398	22.2585	-0.3702
CUR.ED44	-0.8217	27.2317	-0.0302
CUR.ED45	-14.4121	31.4594	-0.4581
CUR.ED51	-0.1929	27.1365	-0.0071
CUR.ED99	-7.4738	22.2627	-0.3357
SEX	0.1237	0.3884	0.3185
Age.at.Test2	0.0144	0.0684	0.2100
years.between.tests	0.1415	0.0967	1.4641
MSS.M	0.0451	0.0214	2.1074

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	84	16
1	47	36
Naïve Misclassification Rate	0.45	
Prediction Misclassification Rate	0.34	

AF.   OPERATIONS SPECIALIST (OS)

	Value	Std. Error	t value
(Intercept)	10.7370	24.4060	0.4399
RACEBLACK	-1.1915	0.7660	-1.5555
RACEINDIAN	-9.2433	20.7424	-0.4456
RACEUNK	-0.5145	0.9263	-0.5554
RACEWHITE	-1.0101	0.7724	-1.3078
CUR.ED25	-15.8066	44.0025	-0.3592
CUR.ED26	-7.8182	24.3638	-0.3209
CUR.ED31	-7.8608	24.3418	-0.3229
CUR.ED41	-7.9527	24.3538	-0.3265
CUR.ED44	-0.5569	44.0092	-0.0127
CUR.ED45	-16.7956	44.0068	-0.3817
CUR.ED51	0.4637	44.0021	0.0105
CUR.ED99	-7.2419	24.3594	-0.2973
SEX	-1.1966	0.4848	-2.4682
Age.at.Test2	-0.0532	0.0662	-0.8038
years.between.tests	0.2317	0.1000	2.3169
OS.M	0.0129	0.0164	0.7881

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	55	23
1	32	54
Naïve Misclassification Rate	0.52	
Prediction Misclassification Rate	0.33	

AG. PERSONNELMAN (PN), RELIGIOUS PROGRAM SPECIALIST (RP), YEOMAN (YN)

	Value	Std. Error	t value
(Intercept)	8.7565	14.3906	0.6085
RACEBLACK	-0.5587	0.7348	-0.7603
RACEINDIAN	-0.9196	1.4492	-0.6345
RACEUNK	-0.1570	0.8966	-0.1751
RACEWHITE	-0.6742	0.7454	-0.9044
CUR.ED25	-13.3446	26.4291	-0.5049
CUR.ED26	-6.2611	14.3206	-0.4372
CUR.ED31	-6.2251	14.2814	-0.4359
CUR.ED41	-5.7421	14.3054	-0.4014
CUR.ED44	-1.4200	26.4404	-0.0537
CUR.ED45	-14.5851	26.4378	-0.5517
CUR.ED51	-0.0096	26.4300	-0.0004
CUR.ED99	-4.5747	14.3276	-0.3193
SEX	-1.5169	0.5397	-2.8107
Age.at.Test2	-0.0156	0.0638	-0.2444
years.between.tests	0.3093	0.1126	2.7460
PN.M	0.0764	0.0308	2.4771

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	45	24
1	20	76
Naïve Misclassification Rate	0.42	
Prediction Misclassification Rate	0.27	

AH.   QUARTERMASTER (QM)

	Value	Std. Error	t value
(Intercept)	7.6602	36.6920	0.2088
RACEBLACK	-0.1737	0.7052	-0.2463
RACEINDIAN	7.4830	20.8664	0.3586
RACEUNK	-1.3563	0.8318	-1.6307
RACEWHITE	-0.0082	0.7070	-0.0116
CUR.ED21	-2.6084	51.8545	-0.0503
CUR.ED25	-16.2175	51.8472	-0.3128
CUR.ED26	-9.4668	36.6804	-0.2581
CUR.ED31	-7.4935	36.6606	-0.2044
CUR.ED41	-10.1024	36.6769	-0.2754
CUR.ED44	-2.0965	51.8489	-0.0404
CUR.ED45	-15.6743	51.8473	-0.3023
CUR.ED99	-8.3155	36.6732	-0.2267
SEX	-0.2201	0.4205	-0.5234
Age.at.Test2	0.0001	0.0652	0.0011
years.between.tests	0.3154	0.1338	2.3568
QM.M	0.0153	0.0515	0.2968

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	26	44
1	10	94
Naïve Misclassification Rate	0.40	
Prediction Misclassification Rate	0.31	

AI.   SHIP'S SERVICEMAN (SH)

	Value	Std. Error	t value
(Intercept)	7.7112	22.2985	0.3458
RACEBLACK	0.3476	0.7095	0.4900
RACEINDIAN	6.8728	12.5417	0.5480
RACEUNK	-0.6510	0.8122	-0.8015
RACEWHITE	0.4965	0.7094	0.6999
CUR.ED26	-8.9200	22.2789	-0.4004
CUR.ED31	-6.6713	22.2458	-0.2999
CUR.ED41	-8.3260	22.2633	-0.3740
CUR.ED44	-2.2650	31.4660	-0.0720
CUR.ED45	-14.4598	31.4623	-0.4596
CUR.ED99	-6.9678	22.2665	-0.3129
SEX	0.0327	0.4334	0.0754
Age.at.Test2	-0.0457	0.0661	-0.6909
years.between.tests	0.3297	0.1392	2.3687
SH.M	0.0704	0.0554	1.2698

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	17	39
1	11	99
Naïve Misclassification Rate	0.34	
Prediction Misclassification Rate	0.30	

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APPENDIX E: IMPROVED MODEL COEFFICIENT AND MISCLASSIFICATION TABLES

A. AVIATION BOATSWAIN'S MATE (AB, ABE, ABF, ABH)

	Value	Std. Error	t value
(Intercept)	0.7077	0.3267	2.1663
SEX	0.7973	0.3117	2.5581
AB.M	0.0440	0.0236	1.8657

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	10	55
1	6	131
Naïve Misclassification Rate	0.32	
Prediction Misclassification Rate	0.30	

B.   AIR TRAFFIC CONTROLLER (AC)

	Value	Std. Error	t value
(Intercept)	0.5223	0.3428	1.5235
years.between.tests	0.0823	0.0328	2.5100
AC.M	0.0475	0.0130	3.6618

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	138	33
1	76	52
Naïve Misclassification Rate	0.43	
Prediction Misclassification Rate	0.36	

C. AVIATION MACHINIST'S MATE (AD), AVIATION ORDNANCEMAN (AO)

	Value	Std. Error	t value
(Intercept)	2.1741	0.7107	3.0593
RACEBLACK	-1.5591	0.6852	-2.2756
RACEINDIAN	-1.7895	1.2180	-1.4692
RACEUNK	-2.6538	0.8557	-3.1014
RACEWHITE	-1.2936	0.6934	-1.8655
AD.M	0.0533	0.0166	3.2206

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	68	68
1	47	104
Naïve Misclassification Rate	0.47	
Prediction Misclassification Rate	0.40	

D. AVIATION ELECTRICIAN'S MATE (AE), AVIONICS TECHNICIAN (AV), AVIATION ELECTRONICS TECHNICIAN (AT)

	Value	Std. Error	t value
(Intercept)	1.5257	0.7013	2.1754
RACEBLACK	-1.8790	0.6623	-2.8371
RACEINDIAN	-6.3563	9.7716	-0.6505
RACEUNK	-1.3716	0.9527	-1.4397
RACEWHITE	-1.2435	0.6047	-2.0563
years.between.tests	0.1733	0.0520	3.3310
AE.M	0.1011	0.0186	5.4261

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	245	6
1	25	12
Naïve Misclassification Rate	0.13	
Prediction Misclassification Rate	0.11	

E.   ADVANCED ELECTRONICS COMPUTER FIELD (AECF), CRYPTOLOGIC TECHNICIAN MAINTENANCE (CTM), ELECTRONICS TECHNICIAN (ET), FIRE CONTROLMAN (FC), SONAR TECHNICIAN SURFACE (STG)

All attempts to create a model with improved statistical significance led to predictions of 100% failure of the second exam.

F.   AEROGRAPHER'S MATE (AG), CRYPTOLOGIC TECHNICIAN TECHNICAL (CTT), CRYPTOLOGIC TECHNICIAN INTERPRETIVE (CTI)

	Value	Std. Error	t value
(Intercept)	-0.5207	0.4244	-1.2271
years.between.tests	0.1869	0.0426	4.3839
AG.M	0.1046	0.0203	5.1638

OBSERVED VALUES		PREDICTION VALUES	
		FALSE	TRUE
	0	278	6
	1	38	9
Naïve Misclassification Rate	0.14		
Prediction Misclassification Rate	0.13		

G. (AIRC/AIRR) AIRCREW PROGRAM, AVIATION WARFARE SYSTEMS OPERATOR (AW), TORPEDOMAN'S MATE (TM)

	Value	Std. Error	t value
(Intercept)	1.5737	0.7165	2.1964
RACEBLACK	-1.6334	0.7038	-2.3209
RACEINDIAN	-1.1924	1.2129	-0.9831
RACEUNK	-0.9980	0.8728	-1.1435
RACEWHITE	-0.9264	0.7060	-1.3123
AIRC.M	0.0299	0.0139	2.1470

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	89	45
1	61	65
Naïve Misclassification Rate	0.48	
Prediction Misclassification Rate	0.41	

H.   AVIATION   STRUCTURAL   MECHANIC   (AM),   AVIATION STRUCTURAL MECHANIC EQUIPMENT (AME)

	Value	Std. Error	t value
(Intercept)	-0.5935	0.4598	-1.2908
years.between.tests	0.1719	0.0413	4.1612
AM.M	0.0780	0.0154	5.0575

OBSERVED VALUES		PREDICTION VALUES	
		FALSE	TRUE
	0	282	5
	1	36	8
Naïve Misclassification Rate		0.13	
Prediction Misclassification Rate		0.12	

I. AVIATION SUPPORT EQUIPMENT TECHNICIAN (AS), CONSTRUCTION ELECTRICIAN (CE), UTILITIESMAN (UT)

	Value	Std. Error	t value
(Intercept)	1.6609	0.5135	3.2344
RACEBLACK	-1.5828	0.4886	-3.2393
RACEINDIAN	-0.7634	0.9565	-0.7981
RACEUNK	-1.6989	0.6901	-2.4618
RACEWHITE	-0.8184	0.4852	-1.6868
AS.M	0.0678	0.0141	4.8235

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	209	28
1	74	49
Naïve Misclassification Rate	0.34	
Prediction Misclassification Rate	0.28	

J.   AVIATION MAINTENANCE ADMINISTRATION (AZ), CRYPTOLOGIC TECHNICIAN COMMUNICATIONS (CTO), LITOGRAPHER (LI), PHOTOGRAPHER'S MATE (PH), STOREKEEPER (SK)

	Value	Std. Error	t value
(Intercept)	1.2505	0.6059	2.0640
RACEBLACK	-1.3977	0.5280	-2.6472
RACEINDIAN	-0.0983	1.0667	-0.0922
RACEUNK	-1.8688	0.7533	-2.4808
RACEWHITE	-0.9381	0.5273	-1.7790
years.between.tests	0.1628	0.0373	4.3636
AZ.M	0.1133	0.0309	3.6638

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	140	27
1	54	59
Naïve Misclassification Rate	0.40	
Prediction Misclassification Rate	0.29	

K.   BUILDER (BU), EQUIPMENT OPERATOR (EO), STEELWORKER (SW)

	Value	Std. Error	t value
(Intercept)	2.7998	0.7702	3.6352
RACEBLACK	-2.2111	0.7715	-2.8660
RACEINDIAN	4.1924	7.5144	0.5579
RACEUNK	-3.0179	0.9534	-3.1653
RACEWHITE	-1.7957	0.7778	-2.3087
BU.M	0.0564	0.0156	3.6020

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	91	49
1	52	101
Naïve Misclassification Rate	0.48	
Prediction Misclassification Rate	0.34	

L. CONSTRUCTION MECHANIC (CM)

	Value	Std. Error	t value
(Intercept)	1.2209	0.4818	2.5343
RACEBLACK	-1.2628	0.4646	-2.7181
RACEINDIAN	-0.6029	0.9505	-0.6343
RACEUNK	-1.5013	0.8460	-1.7745
RACEWHITE	-0.5700	0.4318	-1.3200
CM.M	0.0833	0.0144	5.7966

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	315	9
1	62	14
Naïve Misclassification Rate	0.19	
Prediction Misclassification Rate	0.18	

M. CRYPTOLOGIC TECHNICIAN ADMINISTRATIVE (CTA)

	Value	Std. Error	t value
(Intercept)	0.2301	0.2635	0.8731
years.between.tests	0.1321	0.0361	3.6586
CTA.M	0.1123	0.0276	4.0711

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	127	39
1	74	55
Naïve Misclassification Rate	0.44	
Prediction Misclassification Rate	0.38	

N.   DAMAGE CONTROLMAN (DC), HULL MAINTENANCE TECHNICIAN (HT), MACHINERY REPAIRMAN (MR)

	Value	Std. Error	t value
(Intercept)	0.8265	0.5674	1.4567
RACEBLACK	-1.0744	0.5315	-2.0214
RACEINDIAN	0.7150	1.2555	0.5695
RACEUNK	-0.9372	0.6830	-1.3721
RACEWHITE	-0.3652	0.5304	-0.6885
years.between.tests	0.1227	0.0393	3.1214
DC.M	0.0500	0.0173	2.8962

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	111	35
1	55	62
Naïve Misclassification Rate	0.44	
Prediction Misclassification Rate	0.34	

O.   DISBURSING CLERK (DK)

	Value	Std. Error	t value
(Intercept)	1.0954	0.5934	1.8459
RACEBLACK	-1.3516	0.5023	-2.6905
RACEINDIAN	0.2695	1.0531	0.2559
RACEUNK	-2.0392	0.7946	-2.5662
RACEWHITE	-1.0915	0.5020	-2.1742
years.between.tests	0.1684	0.0369	4.5616
DK.M	0.1132	0.0304	3.7201

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	171	20
1	57	37
Naïve Misclassification Rate	0.33	
Prediction Misclassification Rate	0.27	

P.   DENTAL TECHNICIAN (DT)

	Value	Std. Error	t value
(Intercept)	2.3123	0.9473	2.4410
RACEBLACK	-1.4645	0.8469	-1.7292
RACEINDIAN	5.6578	12.4683	0.4538
RACEUNK	-0.4686	1.0480	-0.4472
RACEWHITE	-1.2021	0.8554	-1.4053
SEX	-1.4240	0.5114	-2.7847
years.between.tests	0.1650	0.0584	2.8253

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	27	26
1	19	81
Naïve Misclassification Rate	0.35	
Prediction Misclassification Rate	0.29	

Q.   ENGINEERING AIDE (EA)

	Value	Std. Error	t value
(Intercept)	1.4003	0.4753	2.9462
RACEBLACK	-2.0765	0.4760	-4.3620
RACEINDIAN	-2.2610	1.1919	-1.8969
RACEUNK	-2.1901	0.7039	-3.1116
RACEWHITE	-1.2092	0.4606	-2.6253
EA.M	0.0414	0.0110	3.7727

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	265	11
1	88	19
Naïve Misclassification Rate	0.28	
Prediction Misclassification Rate	0.26	

R. ELECTRICIAN'S MATE (EM), GAS TURBINE SYSTEM TECHNICIAN ELECTRICAL (GSE), INTERIOR COMMUNICATIONS ELECTRICIAN (IC), MACHINIST'S MATE SUBMARINE (MMS)

	Value	Std. Error	t value
(Intercept)	11.4070	36.6644	0.3111
RACEBLACK	-1.8267	0.5597	-3.2635
RACEINDIAN	-8.2663	15.6477	-0.5283
RACEUNK	-0.9107	0.7187	-1.2672
RACEWHITE	-1.1403	0.5411	-2.1074
CUR.ED21	-9.4816	36.6795	-0.2585
CUR.ED25	-17.3697	51.8421	-0.3350
CUR.ED26	-11.1240	36.6759	-0.3033
CUR.ED31	-10.5048	36.6584	-0.2866
CUR.ED41	-17.8390	38.5797	-0.4624
CUR.ED44	-9.0477	36.6687	-0.2467
CUR.ED45	-18.3689	51.8450	-0.3543
CUR.ED51	-0.8650	44.7692	-0.0193
CUR.ED99	-11.0566	36.6766	-0.3015
years.between.tests	0.1491	0.0402	3.7042
EM.M	0.0601	0.0169	3.5592

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	193	13
1	47	25
Naïve Misclassification Rate	0.26	
Prediction Misclassification Rate	0.22	

S. ENGINEMAN (EN), GAS TURBINE SYSTEM TECHNICIAN MECHANICAL (GSM), MACHINIST'S MATE (MM)

	Value	Std. Error	t value
(Intercept)	0.7901	0.6049	1.3061
RACEBLACK	-0.7262	0.5811	-1.2498
RACEINDIAN	5.4854	6.7718	0.8100
RACEUNK	-1.2334	0.7245	-1.7023
RACEWHITE	-0.3154	0.5870	-0.5374
years.between.tests	0.1060	0.0424	2.5005
EN.M	0.0322	0.0192	1.6752

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	52	57
1	34	101
Naïve Misclassification Rate	0.45	
Prediction Misclassification Rate	0.37	

T.   ELECTRONICS TECHNICIAN SUBMARINE (ETS), FIRE CONTROL TECHNICIAN (FT), SUBMARINE ELECTRONICS COMPUTER FIELD (SECF), SONAR TECHNICIAN SUBMARINE (STS), MISSILE TECHNICIAN (MT)

	Value	Std. Error	t value
(Intercept)	2.1250	0.7674	2.7692
RACEBLACK	-1.8284	0.6028	-3.0330
RACEINDIAN	-6.6852	9.4729	-0.7057
RACEUNK	-2.4757	1.1584	-2.1372
RACEWHITE	-1.2023	0.5622	-2.1386
years.between.tests	0.1485	0.0466	3.1889
ETS.M	0.0877	0.0175	5.0195

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	235	10
1	30	13
Naïve Misclassification Rate	0.15	
Prediction Misclassification Rate	0.14	

U.   GUNNER'S MATE (GM)

	Value	Std. Error	t value
(Intercept)	0.2620	0.5469	0.4792
RACEBLACK	-1.5462	0.5331	-2.9003
RACEINDIAN	-0.4098	1.0329	-0.3968
RACEUNK	-1.5163	0.7887	-1.9227
RACEWHITE	-0.7643	0.5151	-1.4840
years.between.tests	0.1457	0.0388	3.7533
GM.M	0.0413	0.0157	2.6334

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	185	12
1	51	19
Naïve Misclassification Rate	0.26	
Prediction Misclassification Rate	0.24	

V.   HOSPITAL CORPSMAN (HM)

	Value	Std. Error	t value
(Intercept)	0.8585	0.6326	1.3572
RACEBLACK	-1.0163	0.6016	-1.6895
RACEINDIAN	-0.0175	1.3596	-0.0129
RACEUNK	-0.7917	0.7449	-1.0628
RACEWHITE	-0.7380	0.6076	-1.2146
years.between.tests	0.0955	0.0402	2.3736
HM.M	0.0438	0.0221	1.9782

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	76	37
1	57	51
Naïve Misclassification Rate	0.49	
Prediction Misclassification Rate	0.43	

W.   INTELLIGENCE SPECIALIST (IS), POSTAL CLERK (PC)

	Value	Std. Error	t value
(Intercept)	1.4779	0.6964	2.1223
RACEBLACK	-1.3837	0.5582	-2.4787
RACEINDIAN	0.2863	1.0885	0.2631
RACEUNK	-1.7622	0.9707	-1.8154
RACEWHITE	-1.0967	0.5546	-1.9775
years.between.tests	0.2453	0.0427	5.7500
IS.M	0.1941	0.0354	5.4800

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	212	14
1	38	26
Naïve Misclassification Rate	0.22	
Prediction Misclassification Rate	0.18	

X. INFORMATION SYSTEMS TECHNICIAN (IT)

	Value	Std. Error	t value
(Intercept)	1.3951	0.7351	1.8979
RACEBLACK	-1.1029	0.6202	-1.7781
RACEINDIAN	-6.2103	9.7236	-0.6387
RACEUNK	-1.1217	0.9322	-1.2033
RACEWHITE	-0.6918	0.5912	-1.1702
years.between.tests	0.1483	0.0455	3.2624
IT.M	0.0828	0.0170	4.8754

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	238	4
1	32	11
Naïve Misclassification Rate	0.15	
Prediction Misclassification Rate	0.13	

Y.   INFORMATION SYSTEMS TECHNICIAN SUBMARINE (ITS)

	Value	Std. Error	t value
(Intercept)	0.5403	0.4940	1.0937
years.between.tests	0.1573	0.0481	3.2692
ITS.M	0.1143	0.0176	6.4840

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	284	8
1	29	12
Naïve Misclassification Rate	0.12	
Prediction Misclassification Rate	0.11	

Z.   JOURNALIST (JO)

	Value	Std. Error	t value
(Intercept)	1.9920	0.7597	2.6222
RACEBLACK	-1.7634	0.5887	-2.9956
RACEINDIAN	-0.6162	1.2578	-0.4899
RACEUNK	-1.5721	0.9988	-1.5740
RACEWHITE	-1.4048	0.5786	-2.4280
years.between.tests	0.2332	0.0467	4.9894
JO.M	0.2117	0.0379	5.5879

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	235	8
1	34	15
Naïve Misclassification Rate	0.17	
Prediction Misclassification Rate	0.14	

AA.   LEGALMAN (LN)

	Value	Std. Error	t value
(Intercept)	0.6367	0.3870	1.6453
years.between.tests	0.1313	0.0406	3.2387
LN.M	0.0752	0.0324	2.3194

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	38	78
1	39	111
Naïve Misclassification Rate	0.44	
Prediction Misclassification Rate	0.44	

AB.   MASTER AT ARMS (MA)

	Value	Std. Error	t value
(Intercept)	0.8253	0.5422	1.5222
RACEBLACK	-1.1081	0.5130	-2.1602
RACEINDIAN	1.1204	1.2903	0.8683
RACEUNK	-1.2078	0.6874	-1.7571
RACEWHITE	-0.5090	0.5148	-0.9887
years.between.tests	0.1324	0.0386	3.4288
MA.M	0.0779	0.0306	2.5476

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	97	39
1	57	67
Naïve Misclassification Rate	0.48	
Prediction Misclassification Rate	0.37	

AC.   MINEMAN (MN), AIRCREW SURVIVAL EQUIPMENTMAN (PR)

	Value	Std. Error	t value
(Intercept)	0.2363	0.6396	0.3694
RACEBLACK	-1.6844	0.5858	-2.8753
RACEINDIAN	0.1930	1.0943	0.1763
RACEUNK	-2.0900	1.1546	-1.8102
RACEWHITE	-0.7239	0.5574	-1.2987
years.between.tests	0.2365	0.0471	5.0243
MN.M	0.0771	0.0179	4.3000

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	214	9
1	37	17
Naïve Misclassification Rate	0.19	
Prediction Misclassification Rate	0.17	

AD.   CULINARY SPECIALIST (CS)

All attempts to create a model with improved statistical significance led to predictions of 100% success on the second exam.

AE. CULINARY SPECIALIST SUBMARINE (CSS), STOREKEEPER SUBMARINE (SKS), YEOMAN SUBMARINE (YNS)

	Value	Std. Error	t value
(Intercept)	0.6314	0.3569	1.7694
years.between.tests	0.0861	0.0352	2.4420
MSS.M	0.0538	0.0154	3.4857

OBSERVED VALUES		PREDICTION VALUES	
		FALSE	TRUE
	0	104	41
	1	62	60
Naïve Misclassification Rate		0.46	
Prediction Misclassification Rate		0.39	

## AF.	OPERATIONS SPECIALIST (OS)

	Value	Std. Error	t value
(Intercept)	2.2124	0.7621	2.9029
RACEBLACK	-1.4409	0.6993	-2.0606
RACEINDIAN	-7.8262	7.5539	-1.0360
RACEUNK	-0.9731	0.8546	-1.1388
RACEWHITE	-1.4052	0.7020	-2.0017
SEX	-1.3586	0.3922	-3.4638
years.between.tests	0.1070	0.0413	2.5902

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	64	31
1	47	71
Naïve Misclassification Rate	0.45	
Prediction Misclassification Rate	0.37	

AG. PERSONNELMAN (PN), RELIGIOUS PROGRAM SPECIALIST (RP), YEOMAN (YN)

	Value	Std. Error	t value
(Intercept)	1.5249	0.4204	3.6272
SEX	-0.9566	0.3540	-2.7018
years.between.tests	0.1127	0.0393	2.8661
PN.M	0.0574	0.0209	2.7461

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	33	63
1	25	123
Naïve Misclassification Rate	0.39	
Prediction Misclassification Rate	0.36	

AH.   QUARTERMASTER (QM)

	Value	Std. Error	t value
(Intercept)	0.4412	0.5568	0.7924
RACEBLACK	-0.6380	0.5724	-1.1147
RACEINDIAN	5.3777	7.7845	0.6908
RACEUNK	-1.7400	0.7230	-2.4066
RACEWHITE	-0.2256	0.5796	-0.3892
years.between.tests	0.1556	0.0496	3.1369

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	19	68
1	13	130
Naïve Misclassification Rate	0.38	
Prediction Misclassification Rate	0.35	

AI.   SHIP'S SERVICEMAN (SH)

	Value	Std. Error	t value
(Intercept)	0.5963	0.6033	0.9884
RACEBLACK	-0.1276	0.5890	-0.2165
RACEINDIAN	5.5185	7.7181	0.7150
RACEUNK	-0.9460	0.7066	-1.3389
RACEWHITE	0.1861	0.5970	0.3118
years.between.tests	0.1723	0.0583	2.9537
SH.M	0.0562	0.0451	1.2455

OBSERVED VALUES	PREDICTION VALUES	
	FALSE	TRUE
0	9	58
1	9	142
Naïve Misclassification Rate	0.31	
Prediction Misclassification Rate	0.31	

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